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ABSTRACT

This guide is designed to help teachers and parents help handicapped children to acquire the mechanics of language and develop ways of communicating with others. The text covers: (1) establishing objectives for language mastery; (2) birth and development of language; (3) contributions and limitations of the child's environmental context; (4) specific handicaps, such as visual, auditory, and central nervous system; (5) speech production; (6) sign language and graphic symbols communication; (7) use of nonverbal communication; (8) electronic and computerized aids tc speech; (9) evaluation methods and tools; (10) general principles of language-development aid; (11) perceptive and psychomotor aid; (12) daily language practice; (13) speaking to children; and (14) getting children to speak. A bibliography lists approximately 40 items in English, French, and Spanish. (JDD)

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Guides for Special Education No. 5

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Guides for Special Education No. 5

Access by Young Handicapped Persons to Communication and Language

by Aimé Labregère

Unesco, 1987

ED-87/WS/2

PREFACE

This study is the fifth in the New Series of Guides for Special Education published by Unesco.

It is meant to be a popular text and takes a relatively simple approach to its potential readers: teachers helping handicapped children to acquire the mechanics of language and to develop ways of communicating with others, either in special educational institutions or in normal classes: parents anxious to contribute to that process, and other groups involved in the education of handicapped children.

It tries to sum up current knowledge of the complex problems these children face in their access to language and communication, and also of the special physical, mental or socio-cultural difficulties their disabilities expose them to. The study is based on the latest research and findings in this field and brings together in simple form, the known facts, the principal methods of intervention and also various data and opinions normally scattered in technical works or academic publications.

It tries to provide practical advice while not being a recipe book of ready-made solutions. It has the advantage of being written in simple, but nevertheless accurate, terms for the benefit of non-specialists and of being relatively easy to apply.

It goes without saying that the choice of situations, examples and methods presented in this guide, their interpretation and also the opinions expressed are the author's own and do not necessarily reflect the views of Unesco.

FOREWORD

This guide is addressed to teachers engaged in helping young handicapped persons to learn and develop their language ability either in special educational institutions or, as is happening increasingly, within the normal school set up.

It may also prove useful to parents whose early contribution to the development of language, often by simple activities, has come to be seen as crucial.

The guide does not present a ready-made list of solutions: references to the best of these will be found in the appended bibliography. Since the guide tries to show that language is not handed to the child on a platter but must be acquired by him, it also tries to apply this philosophy when proposing practical ideas for helping teachers with the active and personal development of their skills.

That is why it dwells at some length on what happens, especially in very early life, when language develops normally, for it is by comparison with that process that we can best come to understand the problem under discussion and to discover rational solutions to it.

To arrive at these solutions, we need techniques, and sometimes substitute or transitional languages, which will also be examined in this guide; more detailed discussions will be found in the works listed in the bibliography.

However, to apply these solutions, it is not enough to know them: we also need a style - a method of understanding and of acting. Every page is an attempt to contribute to that process, a process more invisible and personal than any other. Some repetitions meant for greater emphasis and a few anecdotes are included to convey certain convictions.

One of these is the belief that, though the children discussed in this study can be fitted into homogeneous categories reflecting some of their needs, they nevertheless remain

persons whose access to language is impeded by a disability, on the nature of which scientists are not always agreed, and moulded by a personal history that has either reinforced or tempered the effects of that disability.

This conviction explains why so little space has been devoted to standardized aid techniques, despite the sense of security they bestow and despite the apparently persuasive statistical evidence in their favour.

This conviction, coupled to the need to avoid repetition, also explains the organization of this guide. It tries to combine problems according to the type of difficulty and the type of disability involved. That is why the chapter called 'The production of speech' discusses deafness, cerebral palsy and many other disabilities, all of which reflect a common need, albeit this need demands remedial action varying from one disability to the next.

This calls for some advice on the best way of perusing this guide. It has not been written so as to allow the reader to look for a particular group of handicaps in the Table of Contents and then turn to the relevant chapter - the guide should be read as a whole, chapter by chapter.

Such counsel, which might seem high-handed, simply reflects the fact that it is possible to combine the information into several, equally logical, systems, and that the approach used here will prove useful to those who realize that, say, the chapter dealing mainly with associated handicaps, contains information that can fruitfully be used to assist widely differing groups of children. All the 'language conquests' of the infant and young child, no matter whether they come sooner or later, through the mouth or the hands, are ultimately the same victories.

CONTENTS

PREFACE

FOREWORD

The problem of objectives 1

Birth and development of language 11

Contributions and developments linked to the context 27

Access to the context and visual handicaps 32

Access to the context and auditory handicaps 36

Access to the context and associated handicaps 49

Access to the context and the central nervous system 66

Speech production 68

The production of signs other than speech 79

Sign languges of the deaf 81

Total communication 87

Graphic symbols 88

The decision to use non-verbal communication 93

Electronic and computerized aids to speech 95

Starting point and evaluation 98

General principles of language-development aid 101

Page

Perceptive and psychomotor aid 104

Daily language practice 108

Speaking to children 109

Getting children to speak 114

Conclusion 124

Bibliography 127

THE PROBLEM OF OBJECTIVES

At first sight, everything looks simple: the objective of education, for all children, is to help them gain '<u>mastery of their mother tongue</u>'. It is only when we inquire into the precise meaning of that phrase, and particularly into the meaning we attach to it in daily practice, that matters become more obscure.

I. LANGUAGE

1. <u>Mother tongue</u>?

Every mother has her own way of speaking. Between that way and all the ways of speaking of the various members of the community to which she belongs, there are sufficient similarities for us to say that they speak the same language.

However what teachers generally refer to by 'mastery of language' is a deliberate choice: the speech used, at least in theory, by a subgroup of the population at large, namely by cultivated persons. How do we define that group and its speech? Sociologists would say that it is a group with an enviable social status. For our purposes, however, and having appreciated that there are several ways of being cultivated, several cultures, which cannot legitimately be hierarchized, we shall note, not without surprise, that what characterizes this group is precisely that its members share the culture teachers try to hand down to their pupils, with all its strengths, weaknesses, and ways of looking at the world.

<u>The role of schools can be defined as bridging two gaps</u>:

<u>the gap between local and 'correct' speech</u> ('correct' referring to an approximation of the standard);

<u>a second gap added to the first: that separating the child's speech from local speech</u>.

These two 'gaps' are not of the same order. They refer to two paths that must be clearly distinguished:

the first is cultural. Schools provide almost the only methodical route to it;

the second is developmental. The greater part of the path has been covered before the child comes to school, thanks to the special abilities he has discovered and developed in a good (relational rather than linguistic) interaction with his environment.

2. So-called effective or 'correct' languages

(a) For the purposes of this argument, let us say that 'correct' language is the language a lecturer or teacher uses in addressing an audience:

to some extent it is the spoken version of the language he writes. Often, if not always, he will read his text;

it conveys everything all by itself. A fisherman dilating on his exploits will complete and enrich his speech with every possible dramatic device: emphasis, changes in intonation and in facial expression, gesticulation... The lecturer cannot permit himself such extravagance: everything is found in his words.

(b) To be as 'effective' as the fisherman (though in a different manner), the lecturer, who does not possess so ample an arsenal of dramatic devices, must use his only tool - language - in a highly methodical way. That tool can convey everything by itself, including the fisherman's flights of enthusiasm, but only on two conditions:

that he uses it to the fullest possible extent (even to analyse the fisherman's enthusiasm);

that he is addressing an audience capable of understanding the exact nature of the nuances he has used in his lecture.

Now, it has to be said that striking that perfect balance (which is a theoretical limit) is more difficult for the lecturer than it is for the fisherman.

The two aspects of his problems (which are symmetrical) have just one solution based on a code that can convey everything and that is known to all. The function of schools is to teach that code.

(c) The 'correct language' is and is not just a code

Just as we have a standard metre (more or less so, since that standard is subject to slight changes), so we have a more or less official code enshrined in grammars and dictionaries. It comprises:

phonology: correct pronunciation;

vocabulary: the aggregate of words used;

morphology: the modifications words can undergo (agreement);

syntax: the rules and meanings of the arrangement of words).

3. The handicapped child, his school and language

(a) Generally, the function of a school is to help pupils to pass from one code (say the fisherman's) to another. It must be stressed that our habit of hierarchizing codes by placing the second above the first is merely the result of our adopting a particular viewpoint. When the fisherman talks about his tackle, with all the special vocabulary he normally uses, then listening linguists can enlarge and perfect their stock of linguistic tools.

Passing from one code to another, means referring everything to the second. The exercise breaks down if the second code is not respected. The result is a failure (of vocabulary, syntax ...). Let us note in passing that the richness or poverty of what we have to say is quite a different problem - it, too, involves the contribution of the school, but must be carefully distinguished.

(b) The problem of the child who enters an educational establishment with very little or poor speech is entirely different.

Simplifying, we could say that the problem here is not changing the code but acquiring a code. Inasmuch,

therefore, as the problems, however small, of handicapped children are due to a deficiency, they are bound up with the processes underlying the acquisition of all codes.

II. LANGUAGE

1. Tool or function?

It is often said that language is a tool of communication. If that were so, the teacher's problem would be to hand it on it to the child, element by element, gradually and systematically, just as is sometimes done with foreign languages.

But we must not confuse the two. A child who learns a second language already has a first. That is not the case with the child we are discussing, who must first, as every infant does, construct his language on the language model but with his needs, wants and experiences rather than with a language. Language is a functions that is born and developed in use.

2. Making language work

Very fortunately, no one has thought of defining and analysing the orthodox process of speech development and to teach it to infants. True, we stimulate children, protect them from some dangers, help them, but we leave them to engage in what are genuine experiments, with a real stake in the outcome.

This assiduous experimentation which leads them to various dead ends may look most unmethodical. However, the backward crawl always precedes the forward crawl which in turn precedes walking, and it was discovered not so very long ago that those learning to walk later in life (for instance some cases of cerebral palsy) gain from such trials and errors.

When applied to language, these comments suggest several imperatives:

(a) effective aid presupposes the creation or exploitation of situations in which recourse to language is necessary;

(b) every attempt by the child to produce speech is important, even if it is perfunctory or breaks the language rules;

(c) this summary language, for instance 'two-word sentences' which might, at a given moment, be the upper limit of a retarded or autistic child, is produced in situations in which it responds to a need, has a precise meaning. However - and in this respect speaking differs from walking, the success or failure of each step, of each act of speaking, depends on us, the interlocutors and addressees;

(d) thus we can, in certain cases, frame the hypothesis that one of the causes of a child's present disability may have been the inability or lack of availability of family members in 'going all the way' to transform failure into success;

(e) above all, if we want to help the child, we must realize that, in the difficult beginning stages of language, the problem is not the quick inculcation of more complex and more orthodox forms, but above all accepting what the child says:

- as being meaningful at all times;

- as an attempt to convey genuine meanings which we should try to discover.

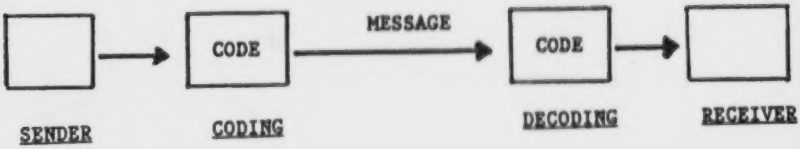
The difficulties are great and in trying to surmount them, we can do no better than turn our attention to that much vaster and more fundamental complex of phenomena known as communication.

IV. COMMUNICATION

So far we have been assuming that the child has nothing but his spoken language to communicate with us. On that basis, his problem is sending a message to an interlocutor. The child has an idea (information) which he transforms into a message with the help of a code (language) and (by using the same tool - language - in reverse) to discover the idea . All this proceeds smoothly on two conditions: that the path of the message is without obstacles and that the code is genuinely shared by the two parties.

The whole process would then be akin to telegraphy which can be represented as follows:

1. The 'telecommunications model'



This model, so attractive because of its simplicity and accuracy, is in fact greatly oversimplified.

Take a telegram or a sentence in the spoken language: 'Grandmother arrives tomorrow'. The message gets through regardless of the circumstances. Has it any meaning? Is it sufficient? There is no general answer. All we can say is, 'Yes, for certain addressees' (those who know enough to tell which grandmother is meant and where she will be arriving ...) 'but not for others'.

In these circumstances, we must reject the idea that the act of speaking is what happens when someone who knows something tells that something to someone who knows nothing.

All our sentences are like telegrams: they strip the message of everything the addressee already knows or is supposed to know.

They are therefore risky undertakings, for how can we tell what the other person really knows? We can 'ascertain' this in two ways:

by redundancies which increase the number of data: 'My Grandmother Marie, who lives in ...';

by feedback based on the reactions of the addressee.

2. The 'cybernetic' model

If we analyse these procedures, we find that, from the moment it is uttered, speech reflects a great variety of data.

(a) While I am speaking, I can hear my voice, guage it (loud or not loud enough: well or poorly articulated ...), and try

to correct my output accordingly. The absence of that type of feed-back explains why the speech of someone who has become deaf, who can no longer guage it, deteriorates gradually and inevitably, if he is not helped with systematic and persistent education.

(b) While I am speaking, I see my interlocutor or interlocutors, whose behaviour tells me how my message is being received, and enables me to make it agree more closely with my intentions by changing my sound emission (I am speaking too loudly or not loudly enough, I am articulating well or not well enough ...), my vocabulary, the complexity of my sentences, the rhythm of my speech... It is the absence of this feedback that makes it so hard for blind children to pitch their voice correctly (in accordance with the interlocutor's distance from them) and to adjust their message.

3. The 'orchestral model'

Finally, we must abandon another familiar model according to which:

(a) communicaiton is a global process integrating numerous 'instruments', of which the most prominent are speech, attitude, gesture, facial expression, looks ...;

(b) each instrument has its own grammar, acquired as a result of our experimentation with models we use unconsciously;

(c) there can be discordance between the message transmitted by one instrument (for instance, one's voice) and that transmitted by another (one's look). Such discordance is the cause of serious disturbances.

Legend: Communicating means sharing ...

Acknowledgement: Photo C.N.D.P. Paris. Jean SUQUET

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V. OBJECTIVES

1. Normal objectives of schools and of special education

(a) The objective of schools is (sometimes too exclusively) to help the child, who can already speak, pass from one language level (that of children of his age and social group) to a higher level.

(b) The final objective of special educatoin is the same. However, without losing sight of this long-term objective, special education often pursues such intermediate objectives as the development of:

1. more or less well elaborated signs of communication;
2. sounds made with the intention of serving as signs;
3. significant gestures;
4. words;
5. a functional language;
6. a language for daily use.

2. The setting of intermediate objectives

(a) This operation will be based on the initial observation of:

the child's sensory and motor equipment;

his cognitive and psycho-affective level (see Table on pp. 25 to 26);

what he produces (cries, gestures, words ...);

what he understands (gestures, words ...);

(b) A developmental perspective

The attention we shall be paying the next chapter to the development of communication and especially to its initial phases, during which the infant learns to recognize routine gestures, will enable us to suggest what co-operative action is needed at every level of development, including the simplest.

Thus we shall pass on from purely gestural communications to exchanges in which speech gradually becomes more and more important and to the refinement of the code that constitutes our language.

(c) A pragmatic perspective

At all levels, no matter what the form of the communication used, communication must have something to communicate to someone for a given end.

(d) A 'sliding' perspective

As far as possible - and we must set out from the principle that it is always possible - a more highly elaborated level must gradually be substituted, at every stage, for a less elaborated level.

Thus gestures which, at the beginning, can be more or less the sole 'vehicle' of communication, will become rounded off, and then gradully be replaced by speech, the intonation of which, at first essential, is gradually reduced to a minor role, in favour of what the increasing precision of language allows it to convey unaided.

We shall be returning to the choices that, in certain cases, lead to the predominant or exclusive development of a mode of communication that is not and does not give rise to spoken language.

For the moment we shall merely point out that our insistence that the immediate objective is not always speech of perfect quality does not mean that we believe another mode of communication should be substituted for it. Similarly, the new ideas about the 'orchestral' character of communication, which have helped us to appreciate the importance of gestures, do not make gestures the ideal or the crux of communication.

Communication is derived from the Latin verb communicare meaning 'to share'; the greater the community of those sharing a code, the greater the possibilities of communication. In other words, the spoken language is irreplaceable.

Our discussion of what happens when we communicate, particularly by means of speech, has led us to replace the idea of juxtaposed material acquisitions with that of a developing function. It follows that, if we want to help a child whose language is rudimentary, we must not only take into account what he has acquired but also and above all view it, quantitatively and qualitatively, in the light of functional development.

The apple tree bears fruit we shall eat with relish one day. If we want to help it to thrive, especially when it seems to have difficulties, then we must look at the soil that sustains it, the air it breathes, the sun that shines down on it, its buds, its leaves and its flowers. We must know how the sap is produced and how it passes from one provisional equilibrium to the next to give rise to the equilibrium of the flowers which, like all the other equilibria, is built up, maintained and then broken down so that the equilibrium of the fruits may be constructed, maintained and then broken down in its turn.

I. GENERAL CALENDAR OF WORD PRODUCTION:
FROM CRIES TO SENTENCES

Birth - reflexive defence cries

1st month - cries and tears due to a precise cause (hunger, pain)

2nd month - babbling linked to the pleasure of vocal exercise

12th month - babblings first recognized by others as words

18th month - two-word 'sentences' (Papa gone)

24th month - brief and incomplete three-word 'sentences' (Papa gone car)

48th month - Complete 6-8 word sentences

Important rider: Our tree analogy should help us to appreciate the tentative nature of the numerical values given above - they are no more than averages. The precocious or belated emergence of any one of the characteristics does not indicate satisfactory or unsatisfactory development. Only a very clear delay (of an entire stage in the above list) poses a problem.

II. BENEATH THE WORDS - THEIR MEANINGS

The number of buds, leaves and flowers would have no meaning without a functional translation. The same is true of words.

1. The indefinite call (1st year)

Vocalized cries and sobs have the aim of drawing attention to the baby itself and to its feelings (hunger, pleasure ...).

2. Designation

The first word and those that follow mark the emergence of a radically different technique, reflecting the recognition of another person. The result is a dialogue.

The child has become capable of calling a particular person, of designating an object or an act (eating, sleeping...), and of answering the questions of adults (what is that?). At the same time the no of rejection makes its debut.

3. Differentiation

Differentiation begins with the emergence of verbs, even if they are merely implicit at first (teddy bye-byes) or if they are used in the inifinitive (baby eat) or the imperative mood (Mummy look!). The analysis of a panorama has made way for the evocation of something that happens (or fails to happen) in that panaroma.

All this is reflected, in speech, by the appearance of:

(a) the object, which allows the child to overcome the vagueness of the verb used by itself
(he drinks milk ... he sucks juice...)

(b) the possible and the impossible
(doesn't come back ... can't ...)

(c) duality, plurality (the other, another, two, many ...)

(d) alterity

('Big teddy', which used to be a single name, is split up, and 'big' can now be used by itself to tell one bear from another)

(d) the 'me'

- appears most frequently in an implicit way,

* first of all as a possessive pronoun (dolly me .. dolly zaza ...)

* then as a subject, with 'want to' or 'going to' + infinitive (want to walk ... going to walk ...)

- next, the 'he' appears in support of the 'me' (which corresponds to the phase in which the child believes it can see another in the mirror, and constitutes an upper limit for many autistic and for some retarded children.

4. Decentration

(a) The 'I' appears. This step, which is of the utmost importance, enables the child to contrast the speaking subject with a 'he', which is now used to designate the other (at this point the child recognize himself in the mirror).

(b) The oppositional 'not'. This is no longer the overall refusal we meet during the child's second year but a comparative judgement (with omissions) (not finished... not nice ...).

(c) Tenses. The present of the panorama is contrasted first of all with the past (perfect) and then with the future, which facilitates narration.

(d) Adjectives, adverbs, prepositions time: (before; after) space: in front of, behind, under, over, with, in, inside ...

(e) clarification of the instrument (with) and of the aim (to).

5. Organization

To the 'explosion' produced by decentration, the child now adds conjunction:

(a) firstly, the 'egalitarian' or purely temporal co-ordination of succession (and, then, and then, after ...) or of alternatives (or else);

(b) secondly, temporal subordination (when, while)

(c) distribution (of the scenario):

- personal pronouns (you, we, they)
- relative pronouns (who, which... what...)

(d) causal subordination (why? because ...)

Causal subordination marks the entry into the universe of rules. The child, almost unaided, first discovers and experiments with a rule, to the point of rushing boldly into the realm of logical generalizations in conflict with common usage - as the child himself comes to realize, first unaided, and then with our help (I make ... he make, I say... he say).

III. ORGANIZERS

For a long time attention has been drawn to the importance of critical periods, that is, to moments in the child's life when certain acquisitions, especially those involving language, are due to appear if they are not to lose their dynamic or 'functional' impact. This view is about to emerge from the 'wooly stage' - research workers now actively use it when defining certain acquisitions responsible for the fundamental disruptions of equilibrium through which the child's development passes and to which Spitz has given the name of ORGANIZERS.

The first of these are the best known:

- at 3 months, the first true smile;
- at 8 months, fear of strangers;
- at 15 months, saying 'no'.

The emergence of the 'I' at about the age of 2 1/2 years is also of capital importance, and so are some of the other acquisitions listed in the Table on pp.26-27. These are milestones of (intellectual, linguistic and emotional) development and should not be passed too late. Until they have been left behind, it is very difficult or even futile to aim at the further objectives.

The Table on pp. 26-27, which should be used with reservations, attempts to juxtapose synchronous developments.

IV. UNDERSTANDING BEFORE DOING

The attention paid to the child's language is usually focused on what the child <u>does</u> or produces at a given moment, everyone behaving as if that were the measure of what he is capable of <u>understanding</u>.

This is reflected in the strange attitude of some adults who act alternatively as if the child understood everything (including requests or prohibitions formulated in too complex, too abstract and too picturesque a way) and as if the child understood nothing, speaking about him, in front of him, as if he were absent.

Many handicapped persons, young and adult, are victims of the prejudice that they have little or poor understanding, especially if they do not speak or speak little.

It cannot be too strongly emphasized that the silence or poverty of speech of a child entering school is not a sign of an 'empty interior' on to which language has to be grafted.

1. <u>The grasp of meanings precedes the production of words</u>

(a) <u>Language is present before the child's birth</u>

During intra-uterine life, the child perceives its mother's voice and reacts to the affective situation her voice reflects.

Some hours after birth, the baby, who is already a person, is capable of distinguishing its mother's voice from the voices of other women.

(b) At any point of its development, the language a child can understand is richer than the one he can produce

Long before he utters his first word, the child is capable of searching out with his eyes persons whose name has been mentioned, or objects whose position is relatively constant, and of responding with gestures to one or two habitual requests.

(c) Every new structure introduced, at a given moment, into the child's spoken language was once part of the language he could understand

Every advance in spoken language breaks the equilibrium of the understood langauge on which it rests and leads to the enrichment and reorganization of the understood vacabulary.

The whole process is comparable to walking.

2. What does a baby understand?

The answer seems obvious: words. But there is a detour.

(a) Gestures first

- To begin with, he discovers a panorama, a context some of whose elements can be shifted about while others cannot. Next, he isolates or distinguishes those gestures among the shifting elements that occur regularly in the actions that concern him.

- Gestures are not signs, but elements of an action: bath, breast ... There is a point of departure and a point of arrival, a before and an after. Gestures help the baby to structure space and time. They enable the baby to anticipate, to be a partner in, and not the mere object of, the action.

- Thus during routine procedures (breast, bottle, bath...), provided they are regular and that there is some human warmth in them, the baby memorizes a number of co-operative interaction schemes known as FORMATS. It is on such formats that the first expressive gestures are based, the first signs and, amongst them, at about the age of 3 months, the first smile.

(b) Words next: the tune comes before the song

There is also a sound context closely connected with the visual context. A FORMAT is constructed with gestures and sounds, and the gestures themselves are associated with no less regular or interesting sounds, mainly derived from adult speech.

However, what has thus become an integral part of the format is not a group of articulated syllables, but a melody, an intonation. Thus the coaxing format, even if stripped of the gestures that are part of it, will be recognized, regardless of the word used to convey it, provided only it goes hand in hand with a coaxing intonation.

In this way a first vocabulary is created and, like all vocabularies, it is constructed with the help of successive separations or differentiations:

the mother's call is distinguished from the child's earliest days;

then, at the age of several weeks, he distinguishes that call from prohibitions.

3. The contribution of adults

With certain exceptions, which unfortunately exist and which often cause language problems, the child's family, and his mother in particular, discover spontaneously what has to be done to render this interaction effective.

This can be summed up in the concept of STYLIZATION which covers attention, regularity of gestures and of intonation, unification and reiteration. In short, what we have here is a ritual theatre.

Such, it is believed, is the shape of the first code. It is not the result of conditioning but of a deliberate construction. It rests on the use of available afferent sensory paths. If one or two of these parths are missing, the remaining ones must be used to the fullest extent, including tactile, olfactory paths and gestural inputs. It is never too early or too late to take the necessary steps, to create the necessary 'formats.

V. BENEATH THE MEANING - DISTANCE

1. Thought and language

Originally the Greek word 'logos' referred to both thought and language and, ever since Plato, the two have been examined by the same methods, with the help of the same concepts. 'Western' thought moves through a 'Platonic galaxy' characterized by lose links between thought and language and which more or less presupposes the anteriority of thought, as it is reflected so well in the 'telecommunications model' to which we have referred.

What we have been saying about (comprehended) speech and especially about the transitions (between the child's environment and his thought-language), which we have called 'formats', enables us to describe what happens as:

(a) A 'cut'

In the welter of sensations that assail him, the child begins - and will continue to do so throughout his life - to distinguish between gestures, objects, sounds and later abstractions involving the emotional life and thought itself, for instance the distinction between believing and imagining...). Language is both the means of effecting this cut (after all the camel and the dromedary might have had the same name) and the result of this cut (not only our vocabulary, but our syntax as well...)

(b) An experiment

This cut or distinction, which is introduced gradually, and which creates the distance between elements of the environment, also creates a distance between the child and his environment. It can change the arrangement of the entire panorama by displacing and re-arranging objects, and lead to the recognition of relationships (time, space, constancy, regularity).

(c) A seizure of power

The power of transforming impulses into actions organized according to the distances established and constant reference marks. A cat is a cat and reacts like a cat.

The power of anticipation from which the pragmatic rules of action (how is it done?) and of behaviour (how should it be done?) and finally 'abstract thought' are derived.

The power of placing oneself in positions other than the centre, of seeing oneself and the world from the viewpoint of others.

It is these achievements which support, and at the same time are supported by, the successive developments of langauge we have noted in the last chapter. Two precepts follow from them:

the need for synchronization. Obviously the child cannot understand in our language and, a fortiori, formulate the 'distinctions' he has observed, experimented with and mastered. It is therefore essential to pay the most careful attention, no matter what his chronological age, to his overall progress (see Table on pp. 26-27) lest our own formulations introduce what is not compatible with the level he has reached. The introduction of more elaborate ways of putting things must therefore take the form of adding new distinctions very similar to those the child has already mastered (that is, understands).

the need for a formulation. This does not mean that we must, for safety's sake, address the child, in the most rudimentary way possible, as some parents do in persisting too long with 'baby talk'. Every new distinction the child learns to master can be conveyed in the appropriate language. Otherwise his will be a non-exploited victory and he will lose part of its benefits. All school subjects, including gymnastics and drawing, have a part to play here.

2. Affectivity and language. Body and code.

We have followed the child as he develops his thought and language with the same momentum, postulating that he has the power and the wish to make that almost constant effort, the reward for which is, ultimately, knowledge and its tools. From the outset, he is a seeker, driven on and moulded by the ardour and performance of those around him.

Unfortunately, that spur is not always a reliable guide. Should an event occur that strikes the child as an intolerable frustration (separation, birth of a little brother who

monopolizes everyone's attention and upsets the balance...) then his language which started off so well and functioned so smoothly may disappear more or less completely (block) or revert to a level long since surpassed (regression). Complex sentences make way for two-word or single-word sentences.

What, one wonders, would happen if man were not so incurably curious?

(a) Development as conflict

True, every stage is a conquest. But every conquest is the end of something. Orpheus, whose words were so powerful was not allowed to look back. Every conquest of the child is a conquest of power, of authority over the environment, of autonomy. But it is paid for in warmth, in tenderness, in protection, which become less direct, less obvious, more abstracted. Weaning, the first word, the first faltering step, the first verb are followed by a period of anxious equilibrium which, generally, soon makes way for further progress.

(b) 'Transition spaces'

Luckily a number of artifices helps us to negotiate these rapids as best we can. They involve 'acting as if', pretending, simulating. One of them - play - involves considerable use of one's body; the other - language - involves a great deal of code.

Play

Play is a much more serious and indispensable activity than one might think. Pure action at the beginning, it is gradually joined by the contemplation of the outcome, and then by the search for a different result. The child shakes the rattle, then drops it to see what happens, then looks for it.

An important step has been taken when the child invents simulation. Thi is a tremendous revenge for the object's propensity of imposing itself, of dominating the child. He picks up a stick, 'acts as if' it were a broom and moves it about accordingly. The miracle works. Not that any real sweeping is done but that was never the point. The point is to determine how much power the child has. The reply of experience is that has enormous power, albeit from only one point of view: that of illusion, magic and incantation. However, in the circumstances, it is all reassuring enough and even very stimulating.

Next, the child will test all his conceptual discoveries in the same way, before using them 'for real'. This underlines the important role of play (see the Table on pp. 25-26) as an indication of what we can gradually propose to and expect of the child.

The transitional object

When play is no longer quite enough, the child turns to another practice, closer to the body and the original fusion. A precise object - a teddy bear, a rag doll... becomes his protector, confidant, unique representative of what the child does not want to lose, and is considered indispensable the moment the pain of separation threatens, for instance at bedtime. If this practice continues too long or assumes too much importance, we should consider it a sign of a badly resolved conflict, which threatens language, and which we should try to understand and help to resolve.

Language

The distancing effect, with which we have endowed language, has another name, namely separation. Language, like play, has the function of filling the void it has created. It is another way of simulating, of producing a copy, of linking the scattered elements.

In the void it has to fill, the empty space between the self and objects, between wishes and reality, the act of speaking has two opposite functions.

The first, closer to the body, to the original sweetness, to the emotions, to dreams is the CONNOTIVE FUNCTION. It is reluctant to yield to the hard law of a code imposed by others, in connivance with the objects. It establishes a more personal connivance with the objects based on a diversion or subversion of the code. It is the method of Alice in Wonderland and also of poets. Here words have a multitude of users, thanks to metaphor and other devices. Contradictions do not exist, nor does logical rigour. Clouds are persons. Do we not way that they race? The child has found a haven from adversity (regressions), useful for protecting himself against others, not for venturing on to their territory, not for 'making progress'.

Closer to the code, to the acceptance of the strict rules of the game, to compromise with others, to 'power' (by others and over others, by things and over things) to the constraints of space and time, to logic and the relativity principle, to dictionaries and grammars, to science and objectivity is the DENOTATIVE FUNCTION.

It likes things to have just one name and likes them to be called by their name which - as Humpty Dumpty put it, in Through the Looking Glass simply depends on who is master.

3. Body and code in access to language

As the child grows he discovers that the world surrounding him - his mother to begin with and objects later - will not always yield to subjective pressures. The 'distances' we have mentioned are so many 'disillusions' produced by the logic of objects.

(a) Agreeing to speak, in daily life as at the beginning of life, is to accept a compromise between the body and the code.

While the body gives us a feeling of security, centralizes and unifies (distance and time are related to the body; acting on things subjects them to bodily discoveries), the code disperses, imposes the rule of things and of others - their independence from us, the limitations they impose on us, their hostility.

(b) Agreeing to speak is tantamount to recognizing that language is a 'profitable' investment, that it unites what the code disperses, that it can give pleasure and that, at the cost of the power conceded to others, it confers on us the power of speech over them.

4. A threatened pact

However, this positive aspect is a matter of experience. It can persuade the child to question the whole process, to 'regress'. If they find the other difficult to bear, adults can put 'more body' into their emotions (fury, tears, fear), to the point of becoming speechless, or taking to their cups, alcohol weakening the function of denotation and apparently rendering people capable of refashioning the world according to their wishes, with a flood of words (or with silence).

The child has the same problems, amplified by his lack of detachment. When things go badly from his point of view he tries to break the equilibrium with:

more body

- this is what happens when language comes up against blocks or regressions, the latter involving a renunciaton of the equilibrium under construction in favour of an earlier equilibrium. When that proves impossible, a lasting block is created, and silence is kept as if it were a fortress. This response is not empty as one might think: autism;

- this is what happens with some blind people and some cases of cerebral palsy whose recourse to others is exceptionally physical. In their case, emotivity and volubility greatly add to the difficulty of gaining access to objects, a difficulty these responses not only reflect but are meant to overcome.

more code

- this is what happens with the obsessions, neuroses and perseverations of some retarded children, invaded and frustrated by the rule of what they must do, incapable of adapting it and hence increasingly excluded from dialogue and from its formative consequences.

- this is also what happens to some retarded and deaf children who have difficulties in using a language in which one and the same word can have several meaning (polysemia), a phenomenon that adds an additional threat to that posed by the code.

5. Pedagogic consequences

Needless to say, most of these difficulties, especially when they constitute a massive and organized structure such as autism, require specialized attention. However, it is more and more widely believed that no progress can be made by isolating such children, with the result that a growing number of them can be found in normal educational structures.

The importance of these problems which face most children and are solved by them more or less successfully but continue to dog the steps of those children whose acquisition of language is impeded, is such that we have devoted a great deal of space to them in this study. It can be summed up as follows:

the acquisition of language is not based on the inculcation of a code but on physical experiences;

without this physical involvement, the child cannot construct objects, time, space, the ego, the 'you' or even logical thought which, though closely linked to language, is neither its primary source not its consequence;

for the body to consent, when things are proving difficult, it must not only be involved but also be interested;

it can only be interested if the code is applied in a pleasurable context, and if it is not too 'academic' and hence stripped of what it holds for all of us, including the most scholarly: its connotative role.

Synchronization table

AGE	ACTION Context participation	ANALYSIS SCHEME	COGNITIVE ACQUISITIONS	PSYCHO-AFFECTIVE ACQUISITIONS	ORGANIZER	PLAY (GAMES)	LANGUAGE (understood)	LANGUAGE (produced)
40 months	First conscious and organized skills displayed for pleasure	'Guidance' of adults	Logic of the 'other'	'Magic' attempts	Conformity	Games with rules	Convention: (the conditional)	Agreement: gender number person 1,600 words
36 months	Organized co-operation Turn of roles Turn of speech	Scenario with several actors	Me - not-me Organized time and space	Narcissism Wish to be attractive Wish to be loved	Let's...	Role-playing games (schoolmistress, shopkeeper...)	Fine differences: comparison duality plurality	Complex phrases (then, the other...) 800 words
30 months	Complex individual action	Scenario with one actor	Symbols	Self-image. Child recognizes himself in a mirror	I	Role-changing games - disguises - transformation of objects	Data concerning time and space	3-word phrases 400 words
24 months	Regularity in behaviour	Social interaction Salutations Demands	Induction: child does the 'same thing' and expects the same result	Imagining	Verb (want)	Ritual make-believe (feeding a doll, driving a car...)	Meaning of verb in orders	2-word phrases his pet name his first name 200 words
18 months	Obeys: orders first then prohibitions	Joint action: Taking Giving	Implements (spoon; pencil)	Remembering Wanting Fearing	No (not)	Make-believe repetition and 'allusion'	Names of objects 100 words	1-word phrases 20 words
12 months	Walking Weaning	Paying attention Pointing Hiding under one's table napkin	The object: exploration	Separation Opposition (acceptance-refusal)	Concept of objects	Throwing, searching	Names of objects in a regular place 10 words	The first word 1 word

I. THE IMPORTANCE OF THE FIRST FEW YEARS

The child who comes to school more or less able to speak, owes that achievement to three main factors: the normal development of his own organism, the stimuli and opportunities to act afforded by his environment, and the appropriate contributions of his family, which acts as a filter, shock absorber and bridge throughout his development.

Except for very clear-cut cases, which are few and far between, it is difficult to define the part of each of these factors which, in any case, are interdependent.

This leads us to two pragmatic propositions:

1. History cannot be rewritten: we can never say what would have happened if ..., or determine the responsibility of the context and especially of the parents.

2. However, whenever we make the early discovery that a child's history is in danger of taking the wrong turn for precise reasons, we must make sure that the best help possible is administered.

(a) Besides medical and possibly social assistance, which depend on the administration of specialized services well before school age, there is a need for educational assistance which, by modifying the child's context and his means of perceptive access to that context, will eventually enable him to reach out for the indispensable acquisitions.

(b) The teacher's subsequent scope depends largely on the effectiveness of this very early assistance. The methodological constraints he will later introduce will

be dictated by his early approach. That means that he is concerned about the subject, that he tries to find out all about it and that, ideally, he is personally involved in it.

II. CHARACTERISTIC HANDICAPS DUE TO THE CONTEXT

1. The notorious cases of 'wolf children and of "wild children"' show that, in the absence of a context in which people speak, language does not appear and thought barely so, and that, in these circumstances, belated educational efforts have a very limited scope.

2. Various handicaps, some of them minor, lead to the impoverished relationship of children with their context: debility, confinement and also family overprotectiveness which keeps children out of danger; difficulties; poor comradeship; conflict and effort. In these circumstances, the child may moreover come to consider his inability as a kind of punishment and hence develop guilt feelings, a sense of permanent fear, or even adapt himself to the situation and the protective cocoon it provides, so much so that he may develop a language divorced from reality.

3. The 'hospitalism syndrome' studied by Spitz and the 'lack of maternal care' syndrome studied by J. Aubry occur in children who suffer from language blocks or language regressions (associated with the frantic use of transitional objects and with rocking to and fro, which is a sign of great confusion), and can be attributed to what we have already described as poverty of context and the absence of vital rhythms.

4. To develop a language and to grow on all possible planes, these children need a 'mother substitute' that is, a person at the centre of permanent and regular events.

5. The language teacher must be a guide to life, to diversity, to the landmarks of time (holidays, anniversaries ...), described at the end of this study. To that end, he may have to wheel to the foot of the child's bed or to the 'bubble' that keeps the germs away - if necessary on the meal trolley that can be found in every hospital - a whole arsenal of objects, plants, and animals about which something interesting can be said or observed.

III. 'SOCIO-CULTURAL' CONTEXT POVERTY

1. The established facts

Apart from the classic relationship between social environment and failure at school, we must stress the no less classic case of the slight or more marked intellectual backwardness reflected in the gap between 'performance tests' and 'verbal tests' among children in disadvantaged social groups. These findings are the more worrying as attempts to explain them by hereditary characters have been definitely refuted by research.

A now fairly dated study by Descoeudres of the overall vocabulary (total number of words used) of children from well-to-do families and children from working class families reflects the dimensions of the problem:

Age	Average	Well-to-do	Working class
2 ys 6 months	675	990	360
3 ys	1,280	1,575	990
3 ys 6 months	1,600	1,845	1,444
4 ys	1,806	2,107	1,505
4 ys 6 months	2,240	2,480	2,000
5 ys	2,380	2,560	2,200

As the children involved have all been to pre-school institutions, the closing of the relative gap over the years is a weighty argument in favour of early education.

Other studies have confirmed the assumed existence of a developmental gap especially in respect of the use of conjunctions, of the complexity of sentences and of 'bad usage'.

2. Explanations

Bernstein has shown that the language of adults in these two social groups reflects significant differences in all areas (richness and range of vocabulary, complexity of sentences, explicitness or implicit suggestion and coherence).

Some children come to school with a limited code shaped by the daily practice of their parents (short and often unfinished sentences, repetitive use of conjunctions: and, then, so ... infrequent use of subordination, poor abstract vocabulary, limited use of nuances or hypotheses, misuse of implication...). Others have an elaborate code (accurate grammatical and syntactic organization, frequent and appropriate use of conjunctions, strict choice of adverbs, frequent use of impersonal pronouns the most 'detached' use of language with the help of stylistic figures, allusions ...).

Other students have shown that, over and above the differences between the models offered by the family, differences in interactions during earliest infancy often redound to the infant's disadvantage, especially when the mother is unavailable and so had less time to play with her baby or can only do so when other preoccupations or fatigue render the contribution of these activities less substantial.

3. Educational aids

(a) The dimensions of the problem are considerable. It does not merely concern those retarded children of whom we have spoken, but also a number of children suffering from another handicap and who must additionally overcome the immediate consequences of the latter, and also many so-called 'educationally backward' children.

(b) Pre-school education and admission to good day nurseries are rightly believed to play a preventive role, which makes it possible to reduce the dangers, especially to children 'at risk'.

At various times, programmes designed to 'compensate' for difficulties of this type by an even earlier than average form of pre-school education for children 'at risk' have been initiated, especially in the United States. No matter what we may think of the results of the 'Head Start' programme introduced in Chicago in the 1960s, it had many promising aspects.

The less sweeping action initiated in Paris with the co-operation of the C.R.E.S.A.S. (29, rue d'Ulm, 75230 Paris) and of L. Lentin (University Paris III) and that introduced into day nurseries in East Berlin (GDR) with the co-operation of

I. Weigl (Child Hygiene Institute) also seem very promising, as do the initiatives supported by the University of Rome (N. Ferro).

(c) Methods of assistance

The failure of some initiatives was undoubtedly due chiefly to the implicit assumptions determining their style. Amongst these, an important place must be assigned to the idea that a handicap rather than a difference has to be compensated at school and, moreover, by means that have to be the more massive the more the child continues to derive its models, during these initiatives, from the family, with which he spends more time than he does at school.

This explains the idea of introducing practices widely different from the normal school routines and of ushering the child into a world of extra tuition, re-education, compensation, conditioning... Now, what is actually called for is not a cure for a disease or stuffing the child, but facilitating, intensifying and rendering more effective those interactions on which the development of the language function rests, including better language manipulation.

The reader will find the appropriate practical advice, at the end of this guide.

Visual perception plays a crucial role in the genesis of 'formats', which means that the acquisition of a working language by children blind from birth would be a miracle if the child and his surroundings did not spontaneously discover a way of exploiting the remaining sense inputs to the full.

In other words, a three-dimensionsal format (hearing, touch, motion) can work if the environment accepts the interaction.

I. THE CHILD WHO IS BLIND FROM BIRTH

This child's concentration on what he senses, feels and constructs mentally, his excessive physical or subjective approach as it were, doubtless holds the key to what both threatens him but also underpins his surprising successes with language and in other spheres.

(a) The phonological development of blind children poses a specific problem: that of toning down the child's unnecessarily loud voice, reflecting his difficulty in locating the interlocutor, with the help of orthophonic and psychomotor 're-educative' measures (see below).

(b) The acquisition of a vocabulary takes place at almost the same rate as it does with sighted. The important notion of objects simply appears a little later and the stock of words of the blind child is richer in 'abstract' words, and poorer in 'concrete' words. We shall be returning to this point.

(c) The development of syntax is generally somewhat slower, which agrees with what we have been saying about experiences whose differentiation and separation are strictly determined by spatial co-ordinates.

By contrast, the temporal articulation of the facts, on which the young blind person concentrate his attention, does not seem to lag behind that of the normal child.

II. LANGUAGE AND DEVELOPMENT OF THOUGHT IN YOUNG BLIND PERSONS

1. Until the age of 9-10 years, the limitations imposed by blindness on the control and generalization of some concrete experiences, such as the relative absence of decentration allowed by play, often seem to retard the development of logical thought and to introduce characteristic errors.

2. However, the blind child seems able to compensate for this lack by developing a form of verbal argument that can function in the absence of the concrete props indispensable to his sighted comrade - a kind of 'mathematical thought' working with representations. Because the role of language as organizer of logical thought - a result and an instrument of our logical grasp of the world - we must be vigilant in observing its development and in profering assistance even if the handicap is not very pronounced.

III. SPECIFIC PEDAGOGIC PROBLEMS

1. The young blind person does not have a sixth sense, but is able to give his remaining perceptions all the attention and organizational skill that the sighted young person disperses over a wider range of informational inputs. However, he is no less frail as a result.

2. Very early education will help him. It can be given by parents alerted to the importance of the context. What is needed is not only a good context (stylization, emphasis) but also its active presentation to the child (by ear and by touch). Such education must provide the necessary compensations (the reassurance of the maternal smile which cannot be seen must be replaced with gratifying contacts and with a 'smiling voice' conveyed by appropriate intonations).

3. Blind children who have been institutionalized very early on should have a 'mother substitute', that is, a relatively constant guardian to whom they can become emotionally attached and who can provide the regular context indispensable to the

emergence of speech. Comparative studies have shown that the absence of such a person almost invariably delays the appearance of the 'I', and in the gravest cases leads to enormous difficulties when it comes to the phases of decentration and above all of organization we have mentioned (and of which the organizer 'I' constitutes the threshold).

4. The threat of verbalism, of using words whose meaning he does not understand properly, threatens the young blind person (as it does other children, but in a special way). The blind child must be taught to escape from it, but his teacher should bear in mind that the blind child must always pave the way ahead with risky wagers.

What he has to be taught, as with walking, is to take the necessary precautions. In this chapter we shall confine ourselves to discussing just one: that concerning the so-called concrete vocabulary; other precautions will be discussed at the end of this guide.

The procedure is well-known: we begin very early on (before habits are formed ...) and with the most common objects. The child must be taught, by touching them, to gauge their shape, weight, consistency; to compare; to observe their qualities (hard, soft; rough, smooth), to distinguish temporary qualities (cold, warm, hot) from lasting ones (rough ...); those associated with a mechanical effects (sharp, pointed) from those bound up with feelings (sweet, agreeable...). The child must also be made aware of the relativity of perceptions, both due to the contrasting properties (hot and tepid water) of objects and also to his own behaviour (he must touch an object to decide whether it is rough or smooth; lift it to decide whether it is heavy or light).

When it comes to objcts that are 'not to hand' and have to be represented by models (games, zoo, village, farm ...), it is essential to bring home to the child the correct scale, if possible by using his own corporal experience (strides, riding pickaback to gain some idea of the real size of a camel ...).

Next, the vocabulary must be 'unfrozen by making the child discover that there are houses and houses, churches and churches. This step should be based if possible on the child's own representations (Meccano, modelling, adhesive strip on a sheet of paper). This too is a form of 'detachment'.

The greatest problems are caused by 'untouchable' objects: air, sun, fire ... Air is, of course, equally untouchable for the normal child. Like him, the blind child can discover it by flapping a piece of cardboard and paying attention to the sensations it produces. For clouds, one must rely on comparisons (they float in the air like cotton wool on water). With colours, the teacher admittedly comes up against a stone wall. He must console himself with the realization that the child may be taught something about red if he is told about its symbolic functions (signals, politics ...) and its connotations (sunny, hot, infuriating to a bull...).

IV. AMBLYOPIC CHILDREN

In addition to the problems that may arise from the quality of their contacts with the environment during the first few years of life, there is one special problem that deserves our special attention. It is obvious, and its sad aspects sometimes delay our taking the necessary educational steps. Those amblyopics who are condemned to go blind eventually must be taught to use what vision they have to the full, the better to cement the concrete supports of their vocabulary, starting with the 'untouchables', and with colours above all.

Though the child with impaired hearing must be helped long before he comes to school, his school will be deeply concerned with that help inasmuch as its own effectiveness depends largely on what the family has been able to do. In other words, in cases of parental failure, the school will have to do the rest, no matter what the child's age.

I. THE PERCEPTION OF SOUNDS

1. Having auditory sensations

All children can receive auditory information provided:

(a) the defect is identified as early as possible

- there are methods (Veit-Bizaguet) providing very early indications (during the first 9 days) and strict control (from the age of 2 1/2 months), which can help us to lose as little precious time as possible during the first few months;

- with all children having language-access difficulties, no matter what their condition is called (autism, mental retardation, character defects ...), it is advisable to examine the condition of the child's auditory apparatus, which can often explain a great many things.

(b) hearing aids should be provided as soon as possible

- that is, at the age of 3 months unless there are contrarindications;

- if necessary, both ears should be provided with hearing aids (stereophonic sound);

- if possible, the child should have a 'selective message transmitter' (for example of the Otikon type). Whereas the classic hearing aid captures and amplifies all sounds, including extraneous noise, this type of radio transmitter with a miniature microphone worn by the speaker (teacher, parents) helps to reduce the amplification of background noise, thus ensuring a more effective dialogue;

- if his residual hearing is near zero, the child can be equipped with a 'vibrator' which enables him to receive significant information through the skin;

- all in all, there are no 'totally' or 'completely' deaf persons, but only persons with auditory handicaps, each one of whom can be helped, provided the help is given as soon as possible.

2. Recieving sounds

A sound, especially if it is soft, is not simply 'given' to us by the environment - we must go after it. This is what happens for instance with such 'imperceptible' sounds as the ticking of our watch.

Moreover, the ear can only distinguish what it has learned to distinguish. Thus a child lacks the innate capacity to distinguish between the 'zh' in leisure and the 'sh' in sure. It acquires this ability one day , in the wake of a host of increasingly subtle discriminations.

The auditory education of deaf children must accordingly be begun at a very early stage, and the parents must be helped to be vigilant and competent and be made to understand what is at stake. The school, in its turn, must be persuaded to continue along the trail thus opened up.

(a) Mother-child interaction is the first step

This interaction should not only revolve round the general qualitites we have mentioned, but also include a number of precautions and special practices:

the precaution of always standing in front of the child and in a well-lit place when addressing him, and of articulating one's words in such a way as to focus the child's attention on the expression and movement of the speaker's lips;

the practice of speaking relatively loudly, with a clear intonation, due emphasis, gestures ...

(b) Education in perception outside the family

This type of education is often given in parallel with training of phonation, with which it should be co-ordinated. It should be carefully programmed along precise lines:

sound, its presence, its absence, its duration

material: a low-pitched gong (or for lack of one, a basin or an oil drum) that can be by the air vibrations it produces, or failing which, by touch. The gong should first be in full view, and then hidden away. The game the child is asked to play is to raise his finger (or to start running) the moment he perceives the vibration, and to lower his finger (or to stop running) when the teacher stops the vibration.

progression: the defect is generally greater in a certain frequency range (low with impairment of the outer or middle ear - transmission deafness - and high with inner ear impairment - perception deafness). We must therefore begin by focusing attention on the zone of maximum auditory response and then extend the range. Next we should go on to other sources of sound (alarm clock, bursting paper bag ...)

distinguishing sounds (series of gongs, pans, musical notes ... recordings of animal cries to be identified by producing the corresponding picture...

recognizing and differenting similar sounds coupled to close observation of the phonatory apparatus (opening of the mouth, position of tongue and lips, possibility of feeling the vibrations set up during the 'r' sound in the pharynx by touching the side of the speaker's neck ...)

It goes without saying that this programme will be the more effective the better the family grasps its importance and continues it at home.

Legend: Producing, reproducing and mastering a rhythm... The tambourine helps the child to appropriate the speech of others and to produce his own speech.

Acknowledgement: Photo C.N.D.P. Paris. Pierre Allard

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II. THE PERCEPTION OF SPEECH

Though part of general perceptive education, the training of speech perception poses specific problems and imposes certain choices. In fact, making out speech is tantamount to identifying meaning. In these circumstances:

1. Should we aid that identification by accompanying gestures based on the 'formats' we have mentioned in connection with the genesis of speech? Though pure 'oralists' reject this approach for reasons of methodological purity, it is less and less evident why such purism is needed. On the contrary, this recourse to gestures seems to help the child, though only on certain conditions:

   that we are really using global gestures designed to set off what has been said, and clearly perceived as such by the child and not as another language capable of conveying things by itself;

   that their use is clearly understood as a provisional facility whose eventual disappearance is part of the programme (which does not mean the absolute rejection of all visual aids).

2. Should the child be taught to recognize isolated words or meaningful sequences? If we assume that recognition does not spring from the mere synthesis of isolated words recognized separately, and that intonation plays an important role, at least at the beginning, then we must renounce the Cartesian division of the problem into as many fragments as possible, and instead present meaningful sequences, short but ample enough to accommodate a gesture and an intonation (Dick is drinking. Is Jim back? Pierre, get up!). To that end, the programme must include systematic preparation for the skills needed to cut up the 'vocal chain'.

3. Lip reading

Advances in comprehension, verified by the performance of tasks or by picture selection, include word recognition, which underlies progress in 'dissecting' and the elaboration of a first 'two-word syntax'. Everything rests on the recognition of the 'word' unit.

At the same time, the child is taught to produce the first key words he understands as part of the general speech-training programme, to which we shall be returning. It leads not only to word pronunciation but also to awareness of the associated visual image (the teacher's lips and the pupil's lips seen in a mirror) and sensori-motor image (muscular contractions). This is the point when the teacher should begin to reduce his reliance on the aid afforded by the accompanying gestures, and when intonation, too, loses some of its importance.

Skill in visual recognition, in 'lip reading', as a complement to the sound information received by the child, must therefore become the object of a systematic training programme.

Several precautions must be taken: standing in front of the child, avoiding back lighting, emphasizing contrasts in articulation and synchronizing the seen rhythm with the heard rhythm. Proficiency calls for systematic training, short of which the child can be enjoined to pay careful attention to what he can understand when watching a television screen with the sound turned down. The main problem is that certain pictures go with words known as labials doubles (baba, papa; boat, moat). While the child should be taught methodically how to use the context and how to choose between hypotheses, this will prove of little help with words badly borne out by their context. That is why recourse must often be had to complementary visual information of an 'artificial' kind.

4. Cued speech

Introduced by R.O. Cornett (USA), Cued Speech is the completion of the visual information conveyed through lip reading (itself a complement to the acoustic information conveyed by speech) with additional visual information helping the listener to distinguish, inter alia, between what we have called 'labial doubles'.

In other words, Cued Speech is no more than a complement of a complement, incapable of conveying meaning by itself. The term cued 'speech' is therefore a misnomer. This qualification is not really an objection - Cued Speech fulfils its particular function very well. Its introduction has led to so much progress that we are entitled to consider it almost indispensable.

If we look at a television screen while turning the sound down, we eventually reach a point where we understand nothing of what people say, even if we can see their faces and their lips. A deaf person, watching the same programme at normal sound, with the help of his hearing aid, his lip-reading skills and his habit of completing sound with contextual information (the logic of perception and comprehension) may understand up to 50 per cent of what is being said, especially if all the speakers articulate their words carefully. Were they to complement their words with Cued Speech, his performance will approach 100 per cent.

Nor is that all. Cued Speech can be used by the deaf child just as soon as he begins to communicate. Before the introduction of Cued Speech, the usual, true but most disturbing, view of the deaf child was of someone who, like a robot, can never assimilate the structure of language, never understand a fairly complex sentence, never formulate, by word of mouth or in writing a properly organized text. It is not long since this chronic inability was first attributed to the (acoustic) scarcity of grammatical markers (which are often monosyllables) and to the fact that the context is more often than not incapable of throwing light on their meaning because the markers themselves introduce fundamental differentiations.

But, and above all, as we saw with the emergence of meaning, these markers are the sign and the tool of all forward leaps in the conquest of language.

When a child uses Cued Speech from a very early stage onwards, assiduously, at home and at school, he will quite often have attained a level of language comprehension and syntactic competence by the age of 7, comparable to that of a normal child at this age - something that was unheard of before. To which we should add that the development of logical thought, of school attainments in general and of emotional equilibrium also benefit from Cued Speech, often spectacularly so and for obvious reasons.

We might even add that in a group of young children into which the deaf child can be fitted, the use of Cued Speech during collective exercises has positive repercussions for the listeners (or at least for some of them) even if they do not 'practice' Cued Speech - simply because of the rhythmical presentation of the chain of sounds and emphases.

Two complementary remarks are called for: 1) the great ease with which adults and children alike can be trained - Cued Speech is not a language and there is no 'dictionary of symbols'. 2) Cued Speech is a valuable but temporary aid - the young deaf person must learn to do without it because he will live among people with unimpaired hearing. It is:

(a) a phonetic method (unlike sign language, it does not reproduce the written form of words but sounds);

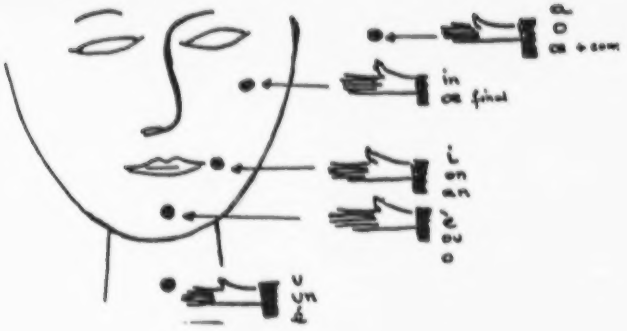
(b) a syllabic method. A syllable is made up of vowels and consonants. A KINEME throws light on a syllable. It is:

- a position of the hand on the face to define a vowel (5 positions);

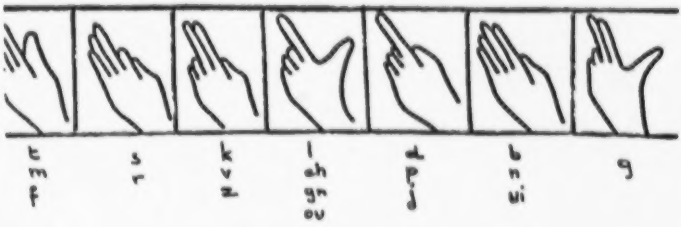
- a configuration of the hand to define a consonant.

(c) The crux of the system is definition, not figuration. Thus the kineme for 'pa', covers altogether 9 different syllables. The appearance of the lips provides the first cue, the first 'class' of possibilities (ba.. pa...ma... man...). In that class, the kineme represents a single possiblity (pa). The kineme is not an instrument of construction but of differentiation.

Positions of the hand (VOWELS)



Configurations of the hand (CONSONANTS)



5. Dactylology (or phonomimy, or alphabetical sign language)

This is an alphabet allowing one to spell, or to represent by a special configuration of the hand, all the letters constituting the words of the message to be transmitted.

It can therefore be used alone to transmit a message (unlike Cued Speech which is an aid to the reception of speech). Its drawback is its slowness, and that means intensive training in early childhood. But it has the advantage of conveying with accuracy what no other system can convey (e.g. proper nouns ...) in the framework of language, which makes it a very useful complement to other forms.

Every language, more or less, has its own finger-spelling alphabet.

English dactylogical alphabet
(sign language)

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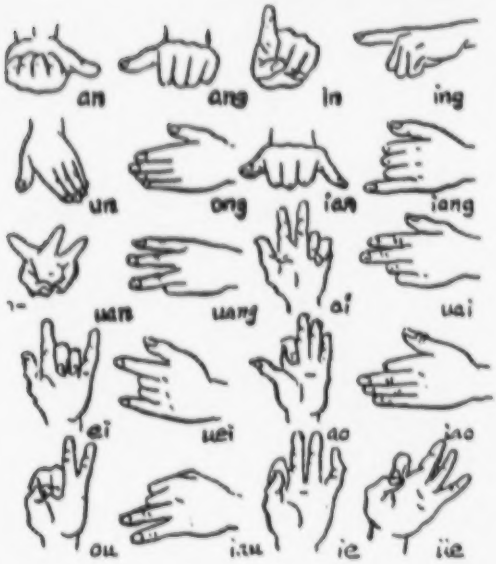
6. Chinese sign language

Chinese sign language is worth mentioning here firstly because of its general use throughout China (since 1956, following a two-year experimental period), secondly because it has replaced the older gestural methods, and finally because it is phonetic (unlike other forms of sign language which are alphabetic).

'The system is based on the Chinese phonetic alphabet, which has a relatively small number of letters and works with phonemes, or language sounds of the 'putong-zhua', the current pronunciation of Chinese ...

Pupils learn it mainly by lip reading, but for the sounds 'ge', 'ke', 'he', this method is inadequate and must be supported with other means...'.

Another system is being tried at present: its basis is the syllable, and it is known as the system of 'manual syllables':



'The first results seemed to show that it did not pose any difficulties for the pupils ... This manual language, used as a complement to pronunciation proves to be simpler, more expressive and more spontaneous. Thus a start has been made with the systematization of a method of teaching the deaf based on the spoken language and reinforced with other forms of expression, as w711 as by the teaching of writing.'

LI HONGTAI AND SHEN JIAYIN 1981

Important rider: Although they are sometimes called 'languages for the deaf' these methods, based on verbalization must be distinguished from the 'gestural language' we shall be discussing below.

Legend: Chinese sign language; oral language 're-inforced' with 'manual syllables ... and a smile.

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ACCESS TO THE CONTEXT AND ASSOCIATED HANDICAPS

I. A VARIETY OF CASES

1. It goes without saying that the number of possible combinations of two handicaps is considerable. Some children suffering from cerebral palsy even have three associated handicaps.

An extra factor is introduced by the severity of the handicap.

For the sake of greater clarity, it is customary to distinguish the main handicap (that imposing the greatest number of restraints and the greatest obstacle to the child's development) from the secondary handicap(s) (responsible for additional difficulties and constraints).

2. By and large, the help needed will always be determined by the main handicap, but should be adapted to make allowances for the nature and the consequences of the secondary handicap(s). For example, in his access to language, a paralysed deaf person will have to overcome all the problems faced by a deaf person and hence need the strategies we have mentioned. However, he has, in addition, restricted access to the environment due to his limited range of movements and gestures, and in some cases to his confined way of life, and we must take these into account before proposing remedies based on the educational measures we have been discussing.

3. One combination of handicaps nevertheless poses problems that call for more than such combinations of strategies: blindness joined to deafness. Luckily very rare, this condition is often consequent upon German measles during the mother's pregnancy, upon premature birth or upon birth traumas. It is advisable to entrust the education of such children to thoroughly trained and experienced professionals. Nevertheless, since the turn of the century, individual teachers without special training, have managed to develop effective methods and to obtain excellent results. One of the most famous was Anne Sullivan, who

became the teacher of Helen Keller. Helen who was blind and deaf, and whose biography is recorded in her The story of my life was able to attend college at the age of 17 years, thanks to Anne Sullivan, who spelled out all the lectures in Helen's palm.

The place accorded in this brief study to so difficult a problem is explained to some extent by a desire to pay homage to a brilliant colleague and also by the fact that the achievements in this field show that even pupils who are the most deprived of all in terms of language can still have enough strength and enough resilience to belie all the catastropic predictions we tend to make at our first meeting with them.

What is even more important is, that in this situation, where the educational procedures guide the construction of language step by step and, to that end, first of all build bridges with the environment, the techniques used have few if any unwanted effects.

Thus, while it is very difficult to profit from observations of children who learn to speak without systematic assistance, the doubly handicapped show clearly which of our strategies and practices are pertinent and which are not.

II. SINGULARITY AND TRIVIALITY OF THE PROBLEMS

1. What poses a radically new problem is that:

   (a) when he first applies his sytematic educational principles, the teacher is faced with a child who has received so little information and along paths that prove so difficult to co-ordinate that the child lacks nearly every one of the 'formats' which, as we saw, such a crucial role;

   (b) as a result, this child, finding itself in a context in which it is extremely difficult to correlate phenomena and to predict actions, is tragically deprived of appropriate guide lines and data concerning his power over others, which triggers off the first 'calling' formats. We say that he has not acquired a sense of communication.

(c) However, the most striking singularity derives from the fact that the information on which he must build his relationship with us, is precisely what our culture and most particularly our schools, which are its guardians and transmitters, have taught us to do without, decrying it and placing much greater value on other inputs. True, at the beginning of school life, children learn to touch quite a few new things, but who would dare say that touching a person in order to get to know him, to enter into a relationship with him, constitutes a proper school activity?

2. Nevertheless, many of the problems call for known solutions which are merely a little more difficult to apply and a little more indispensable than they are for other young handicapped people:

(a) early evaluation of every handicap and early application of the necessary aids;

(b) introduction of an early form of perceptive education (the auditory education described above, the training of residual sight by appropriate perceptive games, but also systematic exercises designed to develop the senses of touch and smell, gestures ...);

(c) the systematic involvement of parents, from birth, and later of teachers, following careful training, together with regular assistance from professionals and frequent consultations;

(d) the most careful check possible from the outset on the method of intervention, especially to determine the functional support that can be expected, at a given moment and at the end, from possible auditory and visual remains.

III. AIDS TO COMPREHENSION: FROM CONTEXT TO WORD

1. Organizing the context to help the emergence of formats

The principle is the same as for normal children. However, the regularity, stylization and emphasis that all parents are able to muster in the general case, must here have the support of the remaining inputs, which are normally neglected.

Now these inputs, though far from negligible, are much more difficult to co-ordinate by the child than are visual or auditory inputs. This co-ordination is the meeting point of all the co-ordinates along which experience is organized. First and foremost amongst them are time and space.

We must therefore begin by organizing the child's daily life in such a way that he can chart his course.

(a) As always, we must build on the perfect regularity of daily routines - care of the body, dressing, meals - in such a way that these events divide time into regular, relatively short segments. In addition, they should also become associated with specially devised before-and-after rituals (to remind the child that it is tactile, olfactory and gustatory sensations or sensations of 'movement' which constitute the interactive chain of the format. Helen Keller put it very well when she said: 'She [Miss Sullivan] brought me my hat and I knew I was going out into the warm sunshine'.

(b) This ability to anticipate events is a first step of great importance and has to be shored up. Gradually, an increasingly large number of objects will be recognized by the children as pointers to some activity about to ensue. When the spoon, the shoes, the pyjamas, the smell of the eau de Cologne assume a meaning, then the child has entered the world of signification.

At the same time, he must be taught systematically to structure space by exercising that gradually enable him to remember and recognize constants or context, beginning with the unity of his body.

2. Bringing out the format of the context

(a) A first level of abstraction is reached when a signifier (motor car key for example) begins to play its usual role (signifying a drive in the car) - when it is no longer an intrinsic element of the action but a way of representing it.

(b) a second level of abstraction is reached when the signifier works in increasingly varied context and situations (to be introduced gradually and carefully).

3. The emergence of words

Gradually, the relationship between signifier and the object to which it refers becomes more abstract, more conventional, less narrow. A distance is created. At that distance, the signifier can become any sign whatsoever made with the teacher's index finger in the child's palm, and later a word traced out in the same way. The vocabulary is born and all that remains is to extend it.

4. The building of a vocabulary

The principles of making progress are obvious: adding common words (that is, words representing objects followed by words representing the most common actions involved in essential routines).

At a given point, the child will produce two-word sentences, starting with verbs (in the infinitive) used to differentiate activities (eat mash; eat bread). Want, in this context, is a 'useful' word the more urgent as it carries something of the subject's 'ego' which will appear in due course.

This progression needs concrete support:

(a) Giving concrete expression to objects

Water is not only fresh spring water, but also water at all sorts of temperatures contained in all sorts of vessels with which one can play, and which one can sip and taste. The child must experiment with all that, and then with such different drinkable liquids as milk... Similarly, a ball may be large, of medium size or small. However, the teacher should bear in mind that the tenuous nature of such experiences imposes a need for slowness, caution and careful attention if language is to emerge with precision. For example, the use of scale models and figurines in work with blind children owes its effectiveness to the teacher's comments and the ensuing complementary explorations. For the deaf and blind child, a car is nothing for a long time but

a smell, a particular seat, a rocking sensation, and muscular sensations associated with acceleration and especialy with deceleration. All that has very little connection with the model toy used to represent the car.

(b) Giving concrete expression to words

At the outset, words have to be traced out for the child in one way or another. There are several ways of doing that:

Some are based on normal writing:

- 'writing' letters with one's index finger in the child's palm. A short extract from the autobiography of Helen Keller, a blind and deaf girl, deserves being quoted for its account of such finger-writing and for high-lighting the importance of the advance from an empirical communication to a form of speech: 'She [Miss Sullivan] brought me my hat and I knew I was going out into the warm sunshine. This thought, if a wordless sensation may be called a thought, made me hop and skip with pleasure. We walked down the path to the well-house, attracted by the fragrance of the honeysuckle with which it was covered. Some one was drawing water and my teacher placed my hand under the spount. As the cool stream gushed out over one hand she spelled into the other the word water, first slowly and then rapidly. I stood still, my whole attention fixed upon the motions of her fingers. Suddenly I felt a misty consciousness as of something forgotten - a thrill of returning thought; and somehow the mystery of language was revealed to me. I knew then that 'w-a-t-e-r' meant the wonderful cool something that was flowing over my hand. That living word awakened my soul, gave it light, hope, joy, set it free! There were barriers still, it is true, but barriers that could in time be swept away. I left the well-house eager to learn. Everything had a name and each name gave birth to a new thought. As we returned to the house every object which I touched seemed to quiver with life'.

Helen Keller's delight in discovering the word 'water' was the joy of discovering signs, not delight at the permanent fixation in the mind of complex piece of wirting which would have been very difficult to do (even for someone as unusually gifted as her). Other factors contributed to her success.

- Words written in relief

Words can be traced out with modelling clay, with string glued to a cardboard square, or with a second layer of cardboard cut out and pasted on top of the first. In this way, a stock of words can be produced, whose recognition by the child (reflected in his ability to chose the corresponding object or to perform the appropriate action) can be the subject of various comprehension tests. Once the child can recognize a small number (4 or 5), the teacher can start to cut up the squares and get the child to reconstruct a word by imitation, starting with syllables, then with letters. This way of teaching the written word, when it is possible, is of the utmost importance, because it refers the child to the most universal code and holds out the promise that he may communicate with everybody. But the difficulty of getting there directly, or recourse to more rapid methods, often calls for other solutions.

Other methods borrowed from the deaf and from the blind

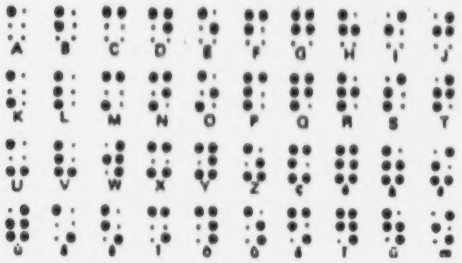
- Sign language is often used to give concrete expression to the child's first language acquisitions. We shall see that some words can be represented in a simple and 'natural' way, for instance 'knife' (two hands held at right angles to each other, one 'cutting' the other. We can thus build up understanding by placing the child's hands in various ways to represent various objects. But sign language is visual which means it is of limited help when we go beyond a very elementary level.

- Alphabetic sign systems (dactylology or Braille) go much further.

Dactylology

Mentioned in the last chapter as a complementary method for deaf people, it can also be the basis of communication with blind and deaf children. However it is cumbersome: the child must be taught to use one hand to read the letters shaped by the hand of his interlocutor.

Braille which is so called after its inventor, Louis Braille, a French teacher, and which is used widely throughout the world, is a means of conveying written information from and to blind persons. The Braille system of writing consists of a code of 63 characters, each made up of one to six raised dots and arranged in six-dot cells. The characters are usually embossed with a stylus on special paper and read by running the fingers lightly over the manuscript. The 63 signs represent 63 of the 64 possible combinations of the game of dominoes:



Figures are represented by the first ten letters preceded by a the 'numeric indicator':

By convention, the dot patterns in the six-dot cell are identified by numbering the dot positions 1-2-3 downward on the left and 4-5-6 downward on the right.

The ten first letters are combinations of dots 1,2,4 and 5; the next ten letters are combinations of the first ten with dot 3. Combinations of the first twenty with dot 6 give the remaining letters of the alphabet and various common letter combinations, accents, capitals, etc.

Special combinations are used for punctuation:

63

Another system, the so-called TADOMA method, has a more limited application

It, too relies on touch. As with lip reading, the source of information is the movement of the lips and the general movement of the jaw and larynx associated with the normal production of speech. The child places his thumb vertically on the lips of the person addressing him and uses his other fingers to feel the movements of the jaw and the vibrations of the throat. The speaker's breath, articulatory movements and vibrations thus help him to identify the spoken words. This method requires long training. It is particularly useful for preparing for speech all children to whom it is applicable.

IV. AIDS TO SPEECH PRODUCTION

Needless to say, the two approaches - comprehension and speech production - are not used successively but in conjunction, and this from the moment the first words are understood.

Nevertheless, their separate presentation not only makes for greater clarity but also highlights the differences between them. The conclusions we can draw are of general interest and go far beyond the special case of deaf and blind children.

1. Having something to say

- Before he receives educational help, the young deaf and blind person cannot produce any signs other than tears or smiles;

- To complete his repertoire, we must help him first of all to mark out his daily living space by means of a rudimentary form of 'psychomotor education' designed to facilitate his memorization of the general structure of his surroundings (distances, common objects). As we said earlier, the whole thing is a matter of routine, order, regularity and inclusion in the 'gestural' memory. Now, that is precisely what we mean by language. The production of signs then becomes an attempt to come to grips with familiar objects and, in case of difficulty or failure, to enlist the teacher's help (taking him by

the hand and leading him to the assumed place of the object in question). This situation can be engineered by the teacher, which leads us to another aphorism: progress is order interrupted at a particular point.

- The child has learned something it did not know, something it can now ask for without tears. In that situation, what is needed is the introduction of an essential 'utility' namely wanting something or someone.

2. Having the means to say so

(a) Access to the spoken language is not necessarily eschewed

It goes without saying that the young deaf and blind person should be allowed to benefit from all the possibilities afforded by instrumentation, auditory education and speech training, and this from the earliest possible moment. (Any residual vision, however modest, must be used to its fullest extent.)

(b) If these attempts fail to provide the young person with a serviceable spoken language (production and reception) then recourse must be had to one of the following written forms:

- dactylology (manual sign language based on the alphabet - see above)

- writing in the palm of the pupil's hand (which, as we said, does not seem the best method for speeding the early comprehension of words but which, when used competently at a later stage, has the great advantage of helping the child to communicate with interlocutors unfamiliar with any special code, that is, with the majority of the population).

- Braille

either used in the normal way (special paper or typewriter of the Perkins Brailler type, for example)

or produced on a portable machine, incorporating a Braille keyboard (6 keys) and a reading cell. With the help of tiny rods that can be raised up, this

machine can produce Braille in relief which can be read by another blind person. There is even a machine with two keyboards and two reading cells facilitating easier and faster dialogue (TELLATOUCH).

3. Having occasions to say things

As we saw, language creates distance and needs distance to be produced. We also saw that this does not always happen without painful emotional problems. Moreover, deaf and blind persons face another problem, namely the creation, evaluation and filling up of the distance at the point of speaking. Because of the paucity of the information they receive from the environment, they find it very difficult to place the environment at a distance, to distinguish it from themselves or to distinguish themselves from it, to grasp that someone they do not touch may still be a partner in a conversation. The teacher must therefore be at the appropriate (physical) distance necessitated by, and allowing, the exchange. He must, by moving out in concentric circles, slowly but methodically help the child to go on from the 'neighbour' he can touch and feel, to the interlocutor he meets by chance and in whom he can also recognize himself by communicating with him - a very close and very fraternal unknown person.

Deaf and blind persons whom we sometimes see attempting to communicate by means that seem unlikely to succeed can tell us a great deal about communication and about our profession.

ACCESS TO THE CONTEXT AND THE CENTRAL NERVOUS SYSTEM

No matter what the quality of the context and of the sense data derived from it, speech will not be understood and produced unless these data are processed, registered, reorganized and re-used by the central nervous system.

When confronted with children who fail to surmount certain difficulties, especially when their sensory equipment seems to be good, we find it difficult not to conclude - consciously or unconsciously - that nature has failed to provide them with sufficient 'gray matter'.

I. THE ROLE OF THE CENTRAL NERVOUS SYSTEM AND ITS LIMITS

1. Cause or scapegoat?

Needless to say there is no general answer to so broad a question. We have raised it mainly as as reminder of an imperative: to proceed with due rigour, that is, to be circumspect in the face of what we do not know.

What matters is not the intellectual satisfaction of getting at the truth but the quality of our approach. In fact, as soon as we postulate the leading role of the central nervous system, rightly or wrongly, consciously or unconsciously, that hypothesis tends to validate itself. It undermines our attention, our confidence and our objectives. It may also be recognized by the child and undermine his self-confidence.

For a long time similar hypotheses were advanced about people born in certain parts of the world or with skin of a certain colour and referred to as 'savages'. Any one who had some 'experience' with them, and even scholars of renown, believed that there was good evidence in support of such views. It is clearly a mistake to put too much trust in predestination and the 'obvious'.

2. Identified anomalies

(a) Cerebral lesions

Depending on their location, they may lead to the impairment of one or several functions. In particular, lesions in a certain area of the left hemisphere may entail speech defects.

The child with cerebral palsy may present:

motor disabilities (lack of control possibly affecting all organs including those involved in phonation);

sensory disabilities;

intellectual disabilities.

Two remarks are called for:

the assumption that an intellectual handicap is directly connected with a cerebral lesion must not be allowed to determine the educational strategies to be deployed, unless that connection has been established by competent specialists, familiar with children suffering from cerebral palsy. The facies of some children, including the facies of those who drool because they fail to swallow their saliva, is not a sign of mental retardation;

disabilities connected with an irreversible lesion are not irreversible. The child's brain has an infinitely greater number of 'circuits' than he will ever use. Thus, according to G. Tardieu, one of the most eminent specialists, 'there are far fewer specialized cerebral structures than used to be believed. If I have a car accident that destroys a certain zone, I shall become aphasic, but in children that zone is not fully specialized and re-education is therefore possible. That means helping such children to replace the structures that have been destroyed with others that have remained unimpaired'.

(b) anomalies of genetic origin

A number of mentally handicapped children present characteristics bound up with the structure of their cells (those of the nervous system included). The best-known cases are children

trisomic for chroosome 21, who are sometimes called mongols. Some of these anomalies are parentally transmitted (but do not prove fatal to all their descendants); others like trisomy, have an accidental cause.

These anamolies are usually accompanied by a mental handicap and by language-acquisition problems. However:

we must guard against improper extensions of the field described as 'hereditary'. As long as a precise biological anomaly has not been identified, no one, not even a parent, brother or sister, has the right to speak of a biological anomaly rather than of what we have called a context deficiency;

we must guard against taking a fatalistic attitude. The effects of the anomaly can be changed. Thus, by purely dietary measures, it is possible to eradicate the effects of some of these conditions (e.g. phenylketonuria), and we know that the quality of the context of earliest infancy and the early administration of educational aids can appreciably change the behaviour and the language-acquisition potential of trisomic children.

3. Assumed anomalies

Because indisputable cerebral lesions or identified genetic anomalies can be the cause of MENTAL HANDICAPS and of those particularly grave difficulties in access to speech to which we refer as APHASIAS, there is a temptation to explain by causes of that order even much more mysterious conditions such as AUTISM, which is reflected in the child's inability to establish stable social relationships with his surroundings (notably by means of speech).

II. PEDAGOGIC INDICATIONS

Since we have no wish to pronounce categorically on open scientific questions many of which remain open, we shall merely try to make some tentative suggestions about language education. To that end, we shall be careful to refrain from rejecting any of the practicable and rational remedies that have been proposed, and not to substitute others based on unjustified pessimism.

1. In all cases in which the difficulties of language acquisition do not seem bound up with either the context or the child's sensory apparatus, intervention should be based on a more accurate, more attentive, more methodical, more progressive and more insistent application of the general practices advocated in this study.

2. A number of language-acquisition problems found in children who are not mentally retarded seem explicable in terms of localized cerebral malfunctions.

   That is the case, as we saw, with the speech-production problems of many children with cerebral palsy.

   In other cases involving difficulties in the comprehension or production of speech (oral and/or written), several authors trace the anomaly back to perceptive problems obstructing the construction of formats. They do not attribute these perceptive problems to the poor reception of sense messages but to the child's inability to organize them. One indication, for instance, is the special difficulty these children have in recognizing objects drawn on a blurred background. Less frequently mentioned is a problem ostensibly of the same order, namely the child's difficulties in organizing his auditory sensations. The positive results generally obtained justify the use with these children of the perceptive and psychomotor education techniques presented below.

3. Language acquisition difficulties of mentally retarded children

   (a) 'exogenous' and 'endogenous' mental handicaps

It is widely believed that some forms of mental handicap are almost exclusively bound up with context anomalies. These forms, said to be 'exogenous', obviously call first of all for an improvement of the context and for the kind of educational methods we shall be outlining below, but whose application must be carefully adapted to the gradual development of the intellectual faculty. The Table (see p.71) in which we have tried to give a simplified picture of the synchronizations of the normal

development provides some useful pointers. However, we must also take into account the fact that the child's interests and preoccupations are often closer to those corresponding to his chronological age than to those corresponding to his mental age (or language level).

'Endogenous' mental handicaps are believed to have organic causes. In accordance with the logic of our approach, they call for a refined form of general education together with special perceptive and psychomotor education. However, apart from the perceptive problems we have already mentioned, these cases seem to come up against a number of special difficulties calling for special teaching methods.

(b) Specific problems of 'endogenous' handicaps

Training

What happens in these cases is sometimes described as 'viscosity': with a given number of attempts, retarded children will learn more slowly than normal children, but in general they will also forget less. As a result, they learn fewer contents.

Transposition

The result seems to be a greater difficulty in separating what has been learned from the original training situation and, hence, in applying it in another context.

Generalization and resolution of the problems

This is reflected in the problem these children have in subsuming their experiences under a rule and in applying any rule they may have learned to the entire field to which it applies.

(c) Repercussions on language acquisition and methods of aid

Since we cannot exclude the possibility - from the very beginnings of the 'viscosity - of confusion due to the difficulties of the task faced by the child and comparable to the confusion of adults feeling a powerful emotion (fear...), the affective conditions in which the training is given must be subject to the precautions we shall be

examining. Appropriate rewards (from sweets to congratulations, depending on the child's interests and age) will serve as 'positive reinforcements'. However, every reward should be linked to the child's performance and not to the child's 'qualities' (good... attentive...) ostensibly reflected in the performance.

Because the training of retarded children involves the memorizing of smaller units, it is obvious that every training session must have a fairly limited objective (for instance teaching the slowest the meaning and correct use of just one word), the teacher carefully noting what has been understood and what has not.

Since what is called for is the creation of new formats, everything we have been saying about stylization, organization, structuring, emphasis, gesticular support and intonation will play an important role.

What is most specific, however, is without doubt, helping the child to create the appropriate 'distance'.

We must on the one hand, as we have suggested in connection with the very different situation of deaf and blind children, establish that 'distance' by means of brief but systematic exercises designed to separate the words that have been understood from the unique object from which they were originally derived. The ball, is a given ball, but also all sorts of balls. And so is the hat, the ladder, etc. They must moreover be placed in context. True, eating is what one does round a table, but it is also nibbling a biscuit or what the cat does.

Next, and very early on, we must introduce the other - a comrade to whom the child can talk about something, for some purpose, and not just in a simulation game or an 'exercise' designed to produce a ready-made answer - the answer the teacher likes. A toy telephone can be very useful provided it is used to convey real information, real orders, real demands from, say, one room to the next. This type of activity can bring home to the child the true meaning of differentiation and all the achievements it brings in its wake.

Finally, we do well to reflect on the role of what is called 'memory' in the acquisition of language. We have already stressed that it is not enough simply to accumulate material if the language function is to develop. We have also shown that comprehension precedes the production of speech. We have finally suggested that the memory of the retarded child if often less fleeting than is generally thought. This phenomenon has some strange effects.

The first of these is the child's difficulty in telling what various verbal forms may have in common. He may understand the meaning of the verb 'to go' without being able to grasp the meaning of 'I went' or 'he has gone' - something other children can do spontaneously. The teacher must therefore, by taking very careful steps but also by keeping the exercises as informal as possible, bolster the suppleness of the child's understanding, and above all choose what he says to the child in the light of these 'morphological' aspects.

Another source of perturbation is the fact that one and the same object can have many names. The same article of clothing may be referred to variously at home, at school or on the television as a pullover, a jumper, or a jersey. The teacher must watch his language and render it compatible with the models used by the child, even if that means sacrificing for a time the perfect orthodoxy over which he keeps guard. At the same time, he should, with the help of exercises designed for precise ends, introduce the child (perhaps starting with an error, though the idea of 'mistaken' behaviour is strictly taboo) to the game with things that hide under several names. Similarly he can propose the game of finding out under what names the family car and all sorts of other things can be recognized. Later he will show that the choice between 'car', 'motor', 'jalopy' and so on is a matter of circumstances, and those of the speaker in particular.

One source of misunderstanding is due, on the contrary to the propensity of one word to designate several things. Now, if the teacher keeps harping on the link between the object 'hat' and its name, he will find it hard to explain the use of 'hat' in such expressions as 'my hat', 'old hat' or 'eating one's hat'. Homonyms also merit the teacher's attention, always from the double point of view of the precautions that have to be taken and the exercises that need to be designed.

We shall return to the subject at the end of this study.

Legend: Words are thrown... at somebody

Acknowledgement: Photo C.N.D.P. Paris. Jean Suchet

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We have been discussing what might be called the preliminaries or the foundations of the act of speaking. We shall now examine what must be done in certain cases to facilitate or improve the production of speech.

I. OBSTACLES TO BE SURMOUNTED

1. These can be due to three types of cause:

   (a) emotional causes. The autistic child usually has the ability to speak and proves it by unexpected if rare utterances. What we have here is an emotional 'block' calling for the strategies suggested below.

   (b) sensory causes. The deaf child must construct his speech by removing two obstacles: the precariousness of the models he perceives and the inability to regulate his own sound production. Help is provided by appropriate equipment and by the auditory education we mentioned earlier.

   (c) motor causes. Some children suffering from cerebral palsy cannot speak because of paralyses or difficulties in controlling the muscles involved in speech.

2. The identification of the 'physical' barriers determines the help to be rendered

   (a) Respiration

   Producing a sound of the spoken language means first of all expelling a column of air in order to vibrate the phonatory apparatus.

   In normal respiration, the inspiration-expiration rhythm is regulated by a (carotid bulb) reflex governed by information about the oxygen needs of the blood.

In persons at rest, this rhythm is usually:

In speech, the rhythm varies from one individual to the next and with the sentences to be uttered. It may, for example, take this form:

It is therefore necessary to inhibit the first reflex and to switch to a different method of regulation.

A number of disabilities (cardiac or respitory insufficiencies) such as breathlessness have consequences at this level. Those affected are usually conscious of them, control them and compensate for them by changing the length of, or cutting up, their spoken sentences.

In some cases, however, these disabilities can cause considerable difficulties, especially in children with cerebral palsy and in some severely retarded children.

(b) The larynx

The column of air produces a sound by causing vibrations in some parts of the larynx, and especially in the vocal cords. There can be two types of vocal anomaly:

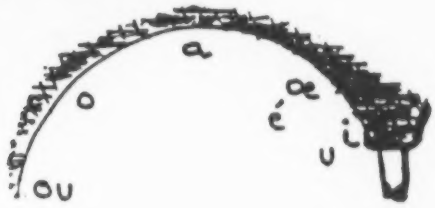
anomalies connected with impairment of the larynx and especially of the vocal cords (ablation, nodules, cysts ...);

anomalies associated with muscular control as found in some cases of cerebral palsy and in some retarded children.

(c) The mouth as resonator

Three parts play an essential role:
- the tongue
- the lips
- the palate

The production of vowels



The tongue: Depending on the tongue's position in the mouth, the column of air will hit the palate more or less close to the teeth. The point of impact determines the sound of the vowel:

oo o a oe ee

The position of the lips makes it possible to distinguish several vowels produced at the same point of impact, e.g. é from oe or ee from ü.

The velum, finally, can direct part of the column of air towards the nasal fossae thus lending every vowel a nasal 'double'.

The production of consonants

Consonants can be distinguished by:

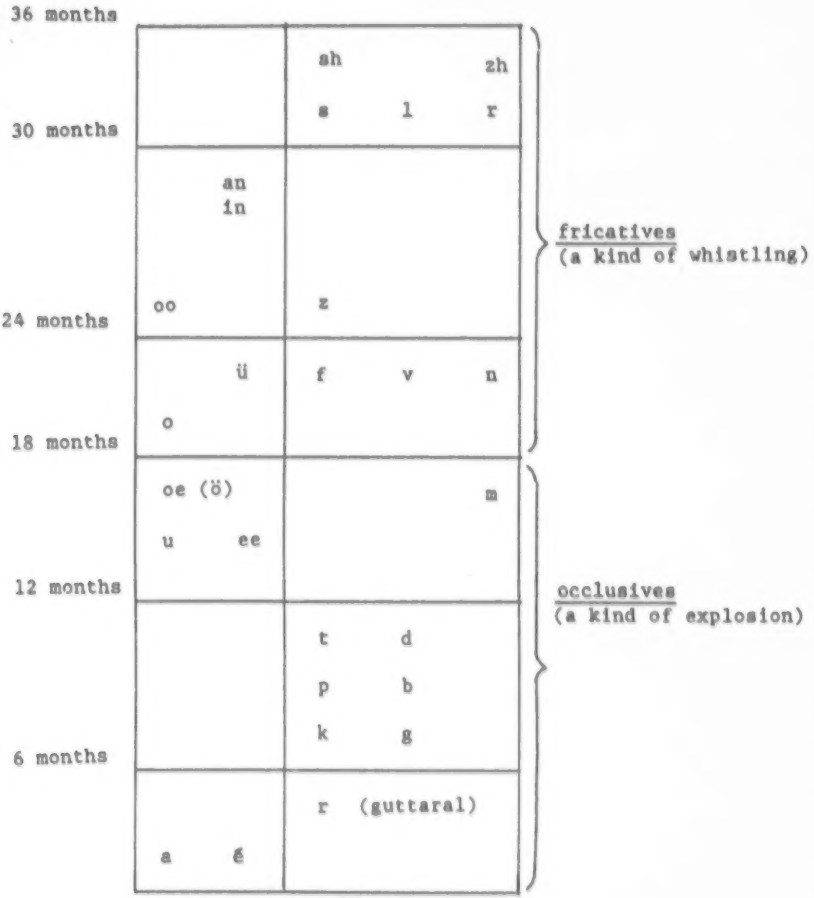
- the point of articulation (pharynx, glottis, teeth, lips ...);
- the mode of articulation (occlusion, friction, 'liquid' sounds);
- the possible exit of part of the air through the nasal fossae or nasalization (m and n)

The table below presents a survey of consonant production:

Points / Modes		Pharyngals (Pharynx)	Gutturals (Glottis)	Palatals (palate)	Alveolars (Gum ridge) (Gum ridge)	Labio-dentals (Lips and teeth)	Bilabials (Both lips)	
Occlusives	voiced		g			d		b
	unvoiced		k			t		p
	nasal			gn		n		m
Fricatives	voiced				zh	z	v	
	unvoiced				sh	s		f
Liquids	lateral					l		
	vibrant	r						

II. THE SOUNDS OF SPEECH

At first, the babbling child experiments with all the possibilities of his phonatory apparatus; then, influenced by outside models, he makes a selection of the elements he can produce at will, mainly in accordance with an 'internal model' but sometimes by imitation. This potential for producing sounds at will seems to be applied in a fixed order linked to the growing mobility of the phonatory apparatus. Regressions (fatigue, intoxication, progressive aphasias) occur in the reverse order.



The order in which sounds appear can be explained (just like some mistakes in pronunciation and the development of words) by:

1. The law of least effort (a, which appears first is hardly more than an exhalation, as in the gutteral 'r' which will later disappear.

2. The law of maximum contrast which, for example, accounts for the early appearance of the occlusives.

III. HELPING SPEECH PRODUCTION

1. This type of aid is generally given by speech therapists. However, it is best to keep parents and teachers informed so that they, too, can make a useful contribution or take independent action if it is impossible to obtain the services of a specialist.

2. Several evaluations are needed: an initial assessment can be made with the help of our last Table. It should consist of two parts, each recorded on a large sheet of paper: 1) utilization of sounds in what spontaneous language the child might use; 2) the possibility of speech production reflected in repeated or isolated words. A continuous evalu- ation or frequent periodic assessments will keep a check on progress and help plan the work.

3. Analysis of the initial assessment

With the help of our observations on the production of sound and especially if we mark off the child's achievements on the Table summarizing the production of consonants, and compare the results with those produced by normal children, we obtain:

a general idea of the magnitude of the retardation;

a general idea of the localization of the difficulties (which may be patently linked to parts of the phonatory apparatus in the case of children with cerebral palsy, or nearer to the normal order of sound production in deaf children, who find it hard to distinguish between sounds).

4. Preparing the child psychologically for speech

From the moment systematic aid is first given, it is usually necessary to enlist or re-inforce the *child's motivations* by plunging him into a batch of intense and compelling language, thus extending his auditory education (play, rounds, mime, considered as occasions for speaking in a climate of gratifying interaction).

5. Preparing the child physiologically for speech

(a) Respiration

The need for that intervention can be determined by observing if the child is able to hold a whispered 'a' for about ten seconds, and to stop and continue it on command. There are several successive phases:

the 'inspiration-expiration' rhythm

- awareness of voluntary inspiration (expanding the chest) and of voluntary expiration (noisy exhalation);

- acquiring mastery over the rhythm by varying its duration (first by imitation and then in response to a visual or tactile signal);

breath training

- blowing at a feather, a grain of salt, a ping pong ball, a larger ball ...;

- blowing soap bubbles, blowing up a balloon.

(b) Movements of the tongue

The need for this type of training is connected with the persistence of grave problems concerning the vowels formed at the front of the palate (ee, é, è) and the fricatives.

Introducing the deglutition reflex (with children suffering from cerebral palsy and severely retarded children who drool): swallowing crumbs of cake, sugar ... placed on the tongue. This is a long business but one that almost invariably proves successful and, in any case, is essential with all children lacking this reflex.

Motor control of the tongue. This is taught with the help of special tongue-guides (spatulas used in order to guide movement and not as levers) or in the absence of these with a *flat* teaspoon handle. The relevant exercises are:

- forward projection and retraction of the tongue;
- movement of tongue from side to side;
- raising the back of the tongue;
- raising and positioning the front of the tongue.

It goes without saying that the 'tool' has a purely temporary role and that it must be dropped just as soon as the first independent, correct sound productions emerge.

(c) Movement of the lips

These movements are bound up with the production of the vowels 'ou' (as in shoe) and 'ü' (as in French mur) and of the 'occlusive' consonants. The main exercises are:

- practising in front of the mirror: smiling, blowing out the cheeks, pursuing the lips, imitating a snore...;

- improving labial prehension (picking up crumbs of cake, sweets ... blowing up balloons or paper bags...).

6. The first (or new) sound productions

(a) Conditions that have to be combined

The child should be given the opportunity for frequent and systematic face-to-face encounters (best in the form of very short, occasional and relaxed periods, at home and at school, which calls for liaison between those involved.

There are two imperatives: combining the optimum psychological conditions (optimum placing of the partners, gaining the child's confidence, changes in effective stimuli and routines, reinforcement of success with appropriate rewards ...) and working without extraneous noise.

The amplification needed by deaf children can, in the absence of more powerful devices, be provided by portable hearing aids. Other instruments needed in all cases are a

means of visualization (a mirror) and, as soon as they prove useful, transcription material (paper and felt pen to associate the written shape of letters with their sound).

(b) Programme elements — the 'demutization' of the deaf
'therapeutic language education' in cases of cerebal palsy

General principles

- the programme should be an extension of that used in auditory education (discussed in an earlier chapter);

- the ability to identify a sound precedes and shores up the ability to produce it, which explains the need for an increase in recognition exercises (lifting one's finger when one recognizes a sound in a series of words addressed to one, first at the beginning and then in the middle of the word, for instance sounds that 'explode' or that 'whistle';

- the precise identification of the model presented by the teacher is facilitated by a gestural complement indicating (by a stylization accentuating the articulation) the method of sound production. Thus a circle described with thumb and index finder can be used for 'oo', or the index finger can be placed on the throat for 'r' ...;

- as soon as some sounds are produced, the child should be made to use them in meaninful combinations, i.e. in the form of words.

Principles of progression with deaf children

- With deaf children, visual information is of considerable importance, which explains why they do best with sounds produced at the front of the phonatory apparatus (p, t, f..). Another important piece of information is conveyed by the muscular contraction of the phonatory apparatus. The appropriate exercises help the deaf child to produce occlusives, followed by fricatives and liquids in that order.

- The differentiation of vowels is particularly hard. Hence it is essential to play on the principle of maximum contrast (after locating the vowel 'a', which serve as a reference point, the teacher locates those vowels furthest away from it, at the front i (ee) and at the back u (oo) of the palate. The remaining vowels will be obtained if they are contrasted with those that have already been acquired.

- The nasal vowels (so essential for French speakers) should be introduced at a relatively late stage because deaf people have a tendency to nasalize spontaneously.

- In general, the law of least effort which is responsible for normal progress from the easiest to the hardest sounds, must be reversed when it comes to muscular effort, which produces the most precise memories and constitutes the most valuable signpost of the contrasts to be brought out.

Principles of a programme for cases of cerebral palsy

- Our last comment does not, of course, apply to children with cerebral palsy, who must be encouraged to rely first and foremost and to the fullest possible extent on what voluntary motor possibilities their phonatory apparatus provides, and then on what the 'physiological preparation' exercises mentioned above allow them to mobilize gradually.

- With that proviso, the advice to make maximum use of contrasts remains of the utmost importance.

Mentally retarded, aphasic and autistic children

- In situations in which the difficulties have a less obvious explanation, it is advisable to introduce a programme reflecting the degree of difficulty and based on contrasts. However, it is important to centre the child's efforts on the 'social' use of speech within his group.

Legend: Rigorous daily practice to improve speech ...

Acknowledgement: Photo C.N.D.P Paris. Jean Suquet

85

THE PRODUCTION OF SIGNS OTHER THAN SPEECH

Communication can, as we saw, travel along many different channels and involve, mainly or complementarily, processes other than speech. The result is language all the same.

I. LANGUAGES

While 'language' or 'speech', in the singular, is a function, languages are tools of communication. We distinguish several kinds by their medium (voice or others) and by their level of organization (language level).

	Verbal (language)	Non-verbal
Oral	speech song ...	reflex-cry wailing ...
non-oral	writing Braille dactylology Morse...	smiling, mimicry drawing pictograms ideograms

II. WRITING

1. The fact that this study concentrates on speech does not, needless to say, imply that writing is a secondary or supplementary act.

- Writing is almost as indispensable as speech.

- Writing is a way of anchoring speech that can be used very early on in difficult cases as a complementary means of memorization (to that end a list of the words a pupil knows and recognizes is displayed in the classroom). We have seen the role such a list can play in the case of deaf-and-blind pupils.

2. Handwriting or typing (on an electric typewriter with a special guard) can be the most immediate objective when teaching cases of cerebral palsy whose phonation is making little progress but whose hands are 'good'.

3. The importance of writing and above all of reading in the development of language of deaf children cannot be emphasized too strongly.

III. NON-VERBAL COMMUNICATION

1. Types of non-verbal communication

(a) Use of graphic symbols

- figurative drawings (sketches, strip cartoons);
- pictograms (coded figurative representations);
- ideograms (coded non-figurative representations);

(b) Use of other symbols

- mime;
- sign language.

2. Types of utilization

Recourse to non-verbal communication can be had in several ways to which we shall be referring at greater length below:

(a) as a replacement for the spoken language when it is deemed to be inaccesible;

(b) as a (simultaneous or alternative) complement to the spoken language;

(c) as an aid to learning the spoken language;

3. Freedom and constraints of codes

Everyone can create a code and use it for communication, provided only that it is shared by his interlocutors. Clearly, a code is a compromise between antagonistic ends (universality, extension of possibilities, suppleness of use...).

We shall now present a brief account of some of the codes most widely used in the education of handicapped children. The appropriate references are given in the bibliography.

IV. SIGN LANGUAGES FOR THE DEAF

1. Introduction

With the exception of Cued Speech, all the methods of facilitating the comprehension of language (lip reading, dactylology ...) and the production of speech by deaf children we have mentioned, have been used successfully for the past three centuries with children having some undefined degree of hearing loss, and, of course, not having the benefit of modern hearing aids.

At the end of the eighteenth century, as part of the doctrine of universal philanthropy preached by the 'enlightened philosophers', the Abbé de l'Epée, anxious to go beyond the individual successes obtained by a very long and demanding form of training and to create instead one language for all deaf people, set up the first educational establishment for the deaf and introduced a new method. It involved abandoning efforts to teach the child to speak normally, and concentrating instead on the teaching of a sign language.

2. French Sign Language (F.S.L.)

Directly based on the original model developed by the Abbé de L'Epée, F.S.L. can be briefly characterized as follows:

(a) it is meant to be 'natural', that is, based on spontaneous gestures by which every one, and every deaf person in particular, completes his oral communications. Thus no one mentions a spiral staircase without explicative gestures. The problem is that the stock of such signs is limited and not very precise. Completing it and rendering it more accurate means constructing a vocabulary incorporating and codifying the natural base.

(b) it comes up against the body-code dilemma

- the 'body' part is easily manifested - the more easily so the more the body is involved. At the limit, it turns into mime;

- the less body, or action, there is the greater is the role of the agreed code, of what has been learned and ultimately of the esoteric factor;

- the methods used to construct the code thus tend to rely most heavily on the 'figurative' aspect, which becomes increasingly difficult to do as one goes from the concrete to the abstract. We distinguish between:

  - designation gestures (an object or a person in the immediate vicinity, I, you, he ...);

  - imitation gestures (eating, dancing ...);

  - metonymic gestures (so-called after the figure of speech used to designate the whole by a part: a donkey by its ears, a bull by its horns). Similarly a function is designated by the corresponding organ (vision by the eye, hearing by the ear);

  - spatial figuration gestures (a house is represented by gesturing a roof and two sides, a room by a square, a garden by a square plus the sign for smelling ...);

  - 'metaphoric' gestures (chevrons = headmaster; donkey - fool ...);

  - purely symbolic gestures (for 'blue', one looks up at the sky);

- The syntactic conventions are unusual

  'The dog follows its master' is expressed in the following order: master/dog/follow.

- much as intonation does in normal speech, so the facial expression and looks introduce nuances or elements of the syntax. Thus, in the same way as one's intonation can transform 'You are off to fish' into a question, so a slight backward tilt of the head backwards at the beginning of a sequence transforms an affirmative statement into a negative statement.

3. American Sign Language (A.S.L.)

A.S.L. is derived from F.S.L., brought to the United States and modified by pupils of the Abbé de l'Epée. Having first adapted the code for use with the English language, they gradually introduced major changes in response to critics who claimed that the original code was too 'iconic' (had too much body or figuration).

By making the code less figurative, they rendered it more 'ideographic' - more arbitrary, more general, more like a language, more open to articulation, more difficult to learn but more capable of conveying abstract ideas.

4. Signing Essential English - S.E.E.

In that situation, characteristic of the dialectic nature of codes, and exploiting the possibilities offered by alphabetical dactylology for spelling words not provided by the code, a 'base code', easier to memorize, has been extracted from the sign code. However, because the 'mixture' of code and sign language is not without problems (and first of all assumes a good knowledge of the spoken language and its orthography), many people have argued that the method may encourage the use of a restricted code and, ultimately impoverish communication.

5. Signed English (Bornstein, 1980)

This method, another offshoot of American Sign Language, tries to avoid the dilemma by taking a different route, by using, in addition to the usual signs, 14 grammatical sign markers.

Signed English accordingly uses two types of sign:

- 2,500 basic word signs chosen from the vocabulary of A.S.L. because of their frequency in conversation;

- 14 sign markers chosen for their usefulness (tenses, plurals, comparatives ...);

- What is very important in this system is that, in principle, by deploying markers to express, at least in part, what grammar normally does, we can use the code while producing the signs in the same order as in normal speech.

6. Signed French; Signed Mother Tongues

Unlike the preceding languages which (at least in principle) treat coded signs as the basis of communication (the dactylological representation of the written word having a complementary role, which poses problems), 'Signed Mother Tongues' are methods based on the visualization of a language with the help of the vocabulary of a sign code and wielding that vocabulary in accordance with the syntactic rules of a spoken language.

Thus, according to the advocates of that solution, the child is taught to 'speak two languages at once'. That claim rightly horrifies linguists. If a word in the sentence of one language can be replaced with a word belonging to another language (feed-back effect) then anything goes. However, the method ceases to be scandalous when we attach no more and no less than its true importance to it. Signed Mother Tongue is simply the spoken language in which the oral production of some of the words has been 'paired' with a sign. That is a feasible and sound approach.

However, we must first agree on the choice of this sign, i.e. of a sign that provides a supplement (and not a complement) of information. Either we borrow it from a ready-made, fixed, esoteric code, or else it may simply be a more spontaneous, more stylized, more emphatic form of gesticulation. 'South European' talk in other words.

And so, after a long detour, we are back at our starting point, not very far from the Abbé L'Epée, and not very far from his detractors who triumphed at the Congress of Milan (1880) and who, for a century, persisted, with arguments difficult to refute, in banning the use of esoteric signs.

7. What practice should we adopt?

These long descriptions and commentaries were indispensable if we wanted to help teachers choose a method. In an ideal world, it would only have been fitting had we also been able to tell them which is the best or at least a good method for them. Alas, there is no such thing. Nor are there any comparative studies on which to base a general choice. That is a fact and it has to be faced. Even less so, is there a standard deaf person to whose needs our choices could be tailored. There are simply

children who can hear (more or less) badly, who have been identified as handicapped at an earlier or later stage of their life, who have been more or less well equipped with hearing aids, more or less well aided in perceiving and producing sounds, whose parents are more or less interested in their problem, more or less capable and available for participating in the educational process, more or less capable of using a complex code or even more complex 'mixtures' in their communications with the children concerned, communications that, in any case, should be stimulating, rich and intense.

Having recalled these facts, we can now propose a number of aids and make a number of other suggestions. The chief of these are:

(a) in all cases, the aid, whatever kind it may be, must be introduced very early on;

(b) the helper must have an optimistic outlook (we shall show below how to arrive at it);

(c) it is important to 'chart' the theoretical issues by which every parent and every teacher must decide his course, taking three parameters into account:

- the logical consistency of the solutions (their short and long-term feasibility and their comparability with rational objectives. In particular, it should be clear whether the aim is to prepare the child for exclusive communication with the deaf or with the whole population; whether or not one considers it utopian to teach a sign language to all, or at least to a fair proportion of, people with normal hearing);

- the logic of the speech function and of its development, which is part of the logic of communication, and by which we must carefully distinguish agility in the manipulation of a tool from the effectiveness of the function;

- the 'sliding' perspective which we mentioned earlier and which leads to the demand that a particular aid (signs for example) useful at one moment should not have negative consequences if the children are taught to dispense with it once it clashes with other aids;

(d) bearing the circumstances in mind, that is, the parents' views of the problem and of the pupil's characteristics. We shall return to this point at the end of this chapter.

(e) bearing all these elements in mind, we should evaluate the importance of each of the possible, i.e. of the following nine solutions:

A. Dominance of speech

(1) oralism (the audio-oral method)
(2) oralism + occasional sign language
(3) oralism + permanent sign language
(Rochester method in the USA; neo-oralism in the USSR, from the age of 2 onwards)
(4) oralism + Cued Speech
(5) oralism + S.E. (or Signed Mother Tongue)
(6) oralism + S.E. + Cued Speech

B. Dominance of signs

(1) S.E. + English
(2) S.E. + English + S.E.E.
(3) S.E. + English + S.E.E. + Cued Speech

Remarks

- this list excludes two extreme methods applied and advocated with great passion: 'pure oralism' which prescribed lip reading and the 'pure sign language' of the Abbé de l'Epée which goes on directly from signs to writing and also proscribes lip reading as a futile practice;

- the nine possibilities of the list must all be understood as including auditory education and lip reading;

- the choice of strategies based on sign dominance (7,8,9) is not very realistic in situations in which the teaching of Signed English cannot be entrusted to a user of that system (that is, to a deaf person or a highly expert teacher).

(f) Strategic suggestion

The optimistic view mentioned above rest on the very positive results obtained if a very early start is made with hearing and other aids, special education, the creation of formats, and if the child, no matter what his degree of hearing loss, is integrated at the earliest possible moment into normal classes run by very well informed teachers. In addition, the child should benefit from:

- spontaneous, stylized, gestures from the cradle onwards...;
- a stylized and insistent intonation;
- the simple precautions that must be taken when speaking to deaf persons (facing them at eye level, without backlighting or glare, so that they can see the lips of their interlocutors clearly);
- lip reading from the first utterance of words;
- Cued Speech from the beginning of speech training.

It is only in particularly difficult cases that it is necessary to resort to signs (as early as possible but also as little as possible, beginning with the most 'figurative' signs). After all, in a normal nursery school there is no reason why, speaking of a donkey, the teacher should not occasionally represent it by its ears, or a bull by its horns. Grandmothers do just that. The 'particularly difficult case', it must be stressed, is not the child who pronounces his words badly but the child with whom one cannot communicate properly because he does not understand.

V. TOTAL COMMUNICATION

Developed in a number of countries, on the initiatives of U.S. institutions concerned with the education of the deaf, 'Total Communication' reflects the combined philosophy of several strategic choices, all of which aim to enable the child to communicate with the help of several codes, including one that is non-verbal.

(a) All we have been saying about the involvement of body and gesticulation in communication in general, in the genesis of speech and in certain types of equilibrium involved in the act of speaking, leads us to pay careful attention to the positive aspects of this eclectic approach.

(b) The scope of these findings goes beyond the confines of deaf education and suggests a number of methods of aid, some of which we have already mentioned, for instance psychomotor aid.

(c) Total communication is not a method but a philosophy designed (HANSEN, 1980):

- to encourage spontaneous expressions likely to help the development of language;
- to let the child choose its preferred mode of communication;
- to permit the use, in the classroom, of a common language based on both sign language and also on the spoken language;
- to give the deaf child the chance of having an identity and self-respect thanks to good communication.

At the end of this account, we would add a final piece of advice, namely to ask the reader to take a calm view of the passionate arguments that have been raging for centuries and that may well have helped to mask the real educational problems to which we shall be returning at the end of this study. No matter what the basis of communication, sound or sign, we must always ask ourselves one question that the fierce polemics tend to disguise: what it is the child needs to say and, before that, to understand.

VI. GRAPHIC SYMBOLS

For several years now, a number of physically handicapped young people whose disability is such that it prevents the production of speech, have been taught languages based on graphic symbols.

Below we present a few illustration of how these languages work - further references will be found in the Bibliography. As with all codes, there is a dilemma, namely:

either the elements are very 'figurative', in which case they are easy to memorize, but difficult to articulate (see picture below ...);

or else they are more 'abstract', in which case they have to be learned and the meaning of each is less obvious, but they can be combined much more readily (see Bliss symbols below ...)

	PCS	Picsyms	Rebus	PIC	Bliss
tu	tu				
homme					
ami					
vouloir					
asseoir					
manger					
et	&	and	+	&	+
chien					

BEST COPY AVAILABLE

1. Blissymbols

These symbols are the expression of Charles Bliss's desire to create a universal written language.

(a) They constitute an organized system of symbols:

- pictographic symbols (conventional drawings of beings or objects)

house person man woman face dog eye

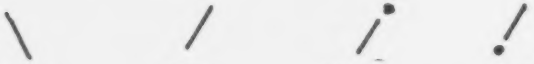
- ideographic symbols (actions, sentiments ...)

stop before after protection feeling

- symbols based on international conventions:

question up ahead down plus

- arbitrary symbols:



one the this that

The latter include 'indicatorsigns' which are grammatical markers:

means that the symbol is being used as an active verb

means that the symbol is being used as a passive verb

marks the plural

marks the past; marks the present; marks the future.

The Blissymbolics Communication Institute (Toronto, Canada) has produced a graduated repertoire (100; 200; 400, 1000 symbols) called Blissymbols for Use (Barbara Hehner, 1980).

(b) Because they offer a possibility of combining quite different approaches, Blissymbols resemble an articulated language system. Thus,

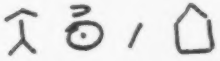
starting with 'man' and adding 'protection', we obtain

'daddy';

similarly we can obtain 'see', 'saw', 'eyes', from

'eye';

it is also possible to write complete and organized sentences:



daddy saw the house

who saw the dog?

(c) Some precautions

** It is important to introduce the symbols very gradually and in the logical order of the emergence of words.

- The noun is used by itself: the single-word 'sentence'. Simple pictographic symbols designating familiar elements in the surroundings are introduced.

- Next, differentiation is attempted (passing from man to woman, father, mother ...)

- Noun followed by verb

- etc.... (see pp 11-13)

*** Boards and trays

- Children suffering from cerebral palsy and unable to resort to manual manipulation must be provided with a board on which they can successively indicate the symbols they want to use (with a finger or with a stick held in the mouth or attached to the forehead ...). This board must reflect a logical (i.e. grammatical) classification: a column of names, a column of pronouns, a column of verbs ..., in order to facilitate the child's search and to provide logical access to the grammar. Its range must never be greater than the child's level of language acquisition and it must be portable (so as to be available in all situations, especially at home).

- By contrast, children capable of using their hands but unable to draw the symbols, should be provided with small movable cardboard squares each carrying a symbol. After use, the child returns them to a tray to the bottom of which the board has been glued.

THE DECISION TO USE NON-VERBAL COMMUNICATION

No matter whether the symbols are gestural or graphic, one day the teacher will have to decide whether or not he should have recourse to non-verbal material. At that point he will find himself torn between methods, parental wishes, diagnoses, forecasts and theories that rarely match. He needs help in making a choice.

I. GENERAL PRINCIPLES

1. The teacher does not chose by himself

The child is not entrusted to him for more than a few hours a day. In particular, since progress in communication is no longer mistaken for progress in language, it is important to remember that the child spends less time with his teachers than with other people (parents, other adults in the institution...). Hence it is essential that all of them be involved in the decision-making process and bear that fact in mind in their communications with the child (even learning to use a code if one is used).

This poses feasibility problems (parents may not be capable or ready or willing...) and anteriority problems (if the parents or other institutions have already tried to introduce a code, then these efforts and their results must be taken into account in the decision-making process, without necessarily being crucial). What is needed first of all is a concerted plan.

2. The choise is not between all or nothing

(a) To the 'beginner' no matter what his age, that is, to someone who does not communicate, the 'figurative' approach - gestural or graphic - will always prove useful provided it is directly related to what it represents and that it is not a pure convention but a means of measuring, of dissecting the world, of putting it at a distance, of dominating it.

(b) On that basis, the problem simply becomes one of allowing the perspective to 'slide' in tune with the child's development.

The main danger, for the teacher no less than the pupil, apart from 'theorizing' the situation away, is growing too attached to the 'esoteric', code and to the services it renders. Progress in communication always involves an enlargement of the field of potential interlocutors.

II. DO IT YOURSELF

Two are enough to produce a code. The first takes four cardboard squares. On one, he draws an imperious forefinger, meaning 'I want!', on the others, a shoe, a hat, a glove. He conveys the rules of the game to his partner and they are ready to communicate (about 3 wishes). If he adds another verb (to buy) he doubles the number of expressible situations. With a further verb (to polish), he adds one likely situation, one that is less so and one that is unusual. A language is just that. The consequences will be examined further on.

This 'trivialization' of the code has three objectives: 1) to dedramatize the common view of such instruments and to demystify general ideas about codes; 2) to show that a code is a game with rules of the kind five-year-olds love; and 3) to encourage teachers to try their hand at it. If they do, they will learn a great deal about language.

III. CODES AND HANDICAPS

So far we have been speaking of potential, 'classic' users: children starting to communicate, handicapped or otherwise; the deaf; children with cerebral palsy. It should be added that graphic or manual codes have been used with many other groups: mentally retarded children, autistic children, aphasic children... and that, no matter what the code, and even no matter what the range of (gestural or graphic) expressions, all these codes have facilitated access to language in the majority of cases.

ELECTRONIC AND COMPUTERIZED AIDS TO SPEECH

This, very modern, field is already so large that we can do no more than refer to it briefly in this chapter and add some bibliographical references at the end of this study.

I. GRAPHIC DEVICES

We have already mentioned the services rendered to generations of children with cerebral palsy by electronic typewriters with a special guard, allowing even children who cannot be taught to speak, to communicate in writing provided only they have a minimum of (manual or other) dexterity.

Now the importance of the proviso has been greatly reduced by the development of interfaces capable of transforming a very large range of signals (including myo-electric signals and even glances) in accordance with an established code, to organize them if necessary and to output data or commands in the desired form (various displays, writing, speech ...).

A typical example is the 'EYE-TYPER' which has just been marketed and which enables the user, by moving his eyes, to shift a spot of light to various points on a board (containing letters, figures or symbols). By looking at other symbols on the board, he can, moreover, determine the type of output (drawing, printing, speech...).

II. SPEECH-CENTRED APPLICATIONS

1. 'Speaking machines'

Already fairly widespread, miniaturized and portable, these machines under various names and trade marks, provide help for a number of people who have lost the ability to speak, for instance following a laryngectomy. They are synthesizers capable of transforming a type-written input (ordinary characters, phonetic symbols ...) into sounds resembling speech.

They are meant essentially for people who have lost their voice but who otherwise have a normal ability to handle spoken and written language.

2. Non-verbal input communication machines

When discussiong Bliss symbols, we mentioned that one serious problem for those to whom they render the greatest service (cases of cerebral palsy) was the drawing or manipulation of the symbols involved.

This problem is solved by the EYE-TYPER we have just described even in extreme cases, producing as it does grammatically correct vocal outputs from an input of symbols (naturally within the limit of given rules).

In many countries, devices of this type are being used for (at the moment, mostly) pedagogic purposes. Most are based on Bliss symbols whose wide range of possible combinations (the 'articulations' of linguists) is one great advantage. They include SAHARA II in France, BLISS TALK in Sweden, SAL in the United States, MMCS in Canada...

3. Vocal input machines

Already in widespread use for environmental control, these machines are still largely at the research stage when it comes to communication aids for the blind and to general aids to speech re-education (pronouncing words in the correct way, which is the only way accepted by the machine).

4. These machines are being developed and popularized and are expected to render great service, particularly in the most extreme cases. They can do everything ... except what happens at the child's deepest level: learn from experience. They are likely to be useful but not indispensable; in particular, they can never replace the skills we shall be discussing in the next chapter.

STARTING POINT AND EVALUATION

I. METHODS AND TOOLS OF COMPARATIVE EVALUATION

Specialists (psychologists, speech therapists, phoniatric experts) have a wide range of tools to compare the phonological, lexical and morpho-syntactic development of a particular child with that of average children of the same age or with that of the average child with the same handicap.

The most common of these tools are described in writings listed in the bibliography.

We have thought it best to do no more than refer the reader to these sources and to propose a method of observation that will help them to analyse the speech of their pupils and, in difficult cases, to mark out their path and the speed with which it should be covered.

II. METHODS AND IMPLEMENTS OF CONTINUOUS OR CONTINUAL OBSERVATION

1. The tools

A tape recorder for the long-term registration of the speech productions of pupils in all sorts of situations. (It is important to identify who is speaking). Even a cheap tape recorder will do valuable work.

A means of evaluating the knowledge gained (a board, a box of gummed pictures...) by which the child's first words can be, not only gauged but also rewarded.

An exercise book (for each pupil) in which the teacher writes down as faithfully as possible (without additions or corrections) all the words the child has produced, briefly indicating the circumstances (the situation that triggered off the utterance of any word). In that way, the teacher builds up a dated corpus of information.

forms for the analysis of 'skills'

* Phonological (see p. 72)
* morpho-syntactical (see below: separation markers)
* lexical: preparing a list of nouns, verbs, adjectives...

2. The method

(a) The compilation at the first meeting with the child and then at regular intervals, of a corpus of information to be analysed in the light of the three 'skills' described above (or in the light of the perspectives that seem important at the time) provides us with markers, no more. These markers signpost the speech produced by the child along various itineraries - which explains why we must be careful with the use of such terms as progress and regress.

(b) We saw that the language the child understands at a given moment constitutes a much vaster corpus than does the language he produces, which is an expression of the former, and that every new production is the manifestation of an underlying equilibrium.

(c) seen in this light, the 'markers' discovered by analysis of the corpus are not merely markers of the child's progress but also, and above all, indicators of a 'shifting' zone at the comprehension level. As a result they are doubly useful, as we have indicated when discussing programmes for special groups:

- they provide the teacher with a frame of reference for the language he himself uses to communicate with the child;

- they provide a programming frame covering the content and objectives of the language sessions to be provided for the child in the short term.

(d) Programming principles

- This type of programming at first concerns the comprehended language, i.e. it first of all determines the language (vocabulary and/or syntax)

SEPARATION MARKERS

MARKERS	NUMBER OF TIMES USED	DATE OF CORPUS		
CALL/DESIGNATION	Name			
	Verb (infinitive or imperative			
DIFFERENTIATION	Object (complement)			
	He			
	Not (impossibility)			
	Other, much			
	Me			
DECENTRATION	I			
	Perfect tense			
	Future			
	Negative comparison (not so ...)			
	Time conjunction (before, after)			
	Space conjunction (in front, behind)			
	Instrument, aim (with, to)			
ORGANIZATION	Co-ordinations (and, and then)			
	Adverb (time) (when)			
	Present participle (going)			
	Relative 'who'			
	Relative what			
	Cause (why? because ...)			

This table is a tool of observation, not of evaluation

that we propose to put into systematic circulation in our contacts with the child (pictures, picture books, mime, stories ...).

- It proceeds at first by differentiation (as we saw in with the acquisition of sounds), beginning with the greatest contrast.

GENERAL PRINCIPLES OF LANGUAGE-DEVELOPMENT AID

Where so many 'techniques' (or programmes) are being proposed to teachers, it may be helpful to point out by what general philosophy each of these techniques is guided.

I. GENERAL PRINCIPLES OF LEARNING

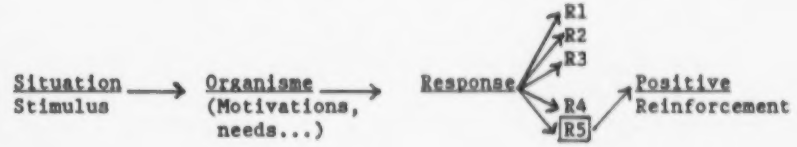
1. Learning by 'simple conditioning'

This is the method illustrated by Pavlov's dog. After repeated association of the bell stimulus with the meat stimulus, the dog ends up by salivating at the mere sound of the bell. True, in a way this involves an abstraction. Few 'programmes' rely explicitly on this pioneering technique.

2. Learning by trial and error or 'operant conditioning'

Whereas simple conditioning needs more than one stimulus, operant conditioning is based on the diversity of the possibile responses. Here learning is encouraged by eliciting a response, and rewarding the subject if the response is appropriate and penalizing him if it is not. The object of such positive or negative reinforcements is to create a stable association between questions and correct answers.

What happens can be represented in the following way:



The main novelty of this approach is the precision of the steps taken to make the situation simple, stimulating, in keeping with the objective and to select the appropriate reinforcements (administered immediately, having explicit links with success or failure, reflecting the child's tastes ...).

A good many 'techniques' or 'programmes' that are currently in use are based implicitly or explicitly on these principles.

3. 'Functional' learning

Operant conditioning is aimed at habits and turns them into tools. That is why it is also called 'instrumental' learning.

Functional learning, by contrast aims at fostering dynamic abilities capable of self-enrichment and of self-adaptation in the way that all functions are.

It does so by respecting a number of principles governing the 'functional' characteristics of the acquisitions:

the motivation principle: every dynamic attainment presupposes a motivation towards that attainment;

the totality principle: the entire person - his past, tastes, relations with his context ... is involved in every new acquisition;

the holistic principle: an acquisition is not made up of fragments but of structured wholes; of conveyers of meaning;

the reorganization principle: a new acquisition is not simply added to the preceding ones but is combined with them, first creating a state of disequilibrium and then leading to re-equilibrium (by a process of differentiation followed by one of integration).

4. Which choice?

The relationship between these principles and what we said earlier, especially about the development of language, explains why the answer to the above question can be found on every page of this study.

However, it would be wrong not to recognize that every function, every skill (driving, for instance, but speaking, too) is greatly assisted by habit.

That is why this attempt to explain the differences between the various approaches leaves the door open. It is neither impossible nor absurd to introduce activities based on conditioning into a 'functional' approach (see the Bibliography for references). Only when these activities become dominant does the pedagogic method change.

PERCEPTIVE AND PSYCHOMOTOR AID

The use, in the above heading, of psychological terms should not disguise the fact that there is something very concrete about either approach advocated in this chapter. Most children with language acquisition problems have a rather tenuous relationship with their bodies: either it controls too many things too directly or else it responds poorly to demands on it. Experience show that helping the child to manage this relationship better also helps him to develop his language.

I. PERCEPTION

1. Perception is the ability to distinguish objects, to recognize them, to put them at a distance, to establish a non-subjective relationship with them, to master them. We have seen that the construction of language proceeds along that very road.

2. Classic perceptive education, for instance that advocated in this study for the teaching of deaf and blind children, aims essentially at improved use of the sense organs. The method set out below aims more precisely at those perceptive faculties that are mental abilities - the ability to analyse and grasp what one wants and to temper such emotions as fear - precisely what many problem children cannot do.

3. Types of exercise

   - Analysis of the perceptive field: recognition of a drawing on a blurred background; comparing the distance of two objects; judging their sizes when they are at a distance. Recognition of a theme or of an instrument in a musical passage...

- Recognition of the logic of objects: embedding, sorting, completion by logical means (finishing the drawing of a house, of a man) or by symmetrical considerations. Constructions in space (bridges with cubes, balances...). Imagining the hidden part of a solid.

- Differentiation (distance objects, inverted objects, incomplete objects).

II. PSYCHOMOTOR AID

1. Psychomotor aid is not akin to physiotheraphy or kinesitheraphy, both of which have the objective of restoring movement.

2. Psychomotor aid concerns facilitations and difficulties connected with the workings of the body in the development of thought, language and affectivity. It is not concerned with barriers to the sensory or motor equipment, but with the mental barriers put up by the 'actual body', as the latter is experienced, used and put into action - against the background of the child's own history, reflected in his grasp of time and space, pleasure, displeasure, dominant or submissive attitude, adroitness or maladroitness and his ability to control and guide his impulses.

3. Psychomotor aid has three 'dimensions'

(a) the dimension of the organization of the motor activity itself, as viewed against the background of individual development and the stages of that development. The child has to be helped in various ways: control and dissociation of motion, balance, effective manipulation of various objects, motor efficiency (speed, accuracy ... use of homogeneous lateralization (remembering the right-left dominance which has already been more or less established), the ability to imitate an action with precision (that is, to analyse, memorize and reproduce its course), the ability to perform certain actions rhythmically, to interrupt them and to resume them. In sum, the child must be helped to construct his 'body schema' - i.e. to obtain a good understanding of his body as a whole,

to master it and to assimilate the information it provides - which, as we have said, is the basis of every attainment.

(b) The affective dimension is linked to what we have said about the child's development and consequent frustrations. This is a very important aspect and, in some cases, heads the list of difficulties. The autistic child's attitude, which may even cause him to strike himself, or the everlasting rocking motion of some retarded children reflect a divorce between the child and his body, but also and above all a divorce between the child and others, which is the worst starting point for speech development. At a less general level, the hypertonia of some children expressed through permanent rigidity and the permanent instability or the inhibitions of other children are equally signs meriting attention.

Dealing with these massive problems is the job of specialists, but psychomotor aid given by a teacher can be useful inasmuch as - not only during special exercises but at all times - it drives home the fact that if this particular form of aid is to help the child to acquire 'abilities', it must first of all reconcile him to his own body, to something in his own experience. This is done by allowing him to savour the pleasure of successful action with full awareness.

(c) the cognitive dimension: movement demands mastery of temporal and spatial relationships. Now it is that very mastery based on certain 'distinctions' which creates and utilizes language. Thus tables, benches, boxes help the child to put himself physically above, below, inside, outside, higher, lower, nearer, further... But he is also aware of that central tool which is his body when he is able to name its parts and move or point at will at the part the teacher has named, execute a parallel movement or an asymmetrical movement, combine his own movements with those of a comrade... It is even useful to practise and analyse meaningful gestures (of greeting, of imitation...)

4. Techniques and practices

(a) A special place is needed: a hall large enough to accommodate a group (the work is always done in groups because the aim is to 'socialize' the body). Also needed are accessories for the mastery of space (objects for throwing, for climbing, for occupying, for taking, for giving ...); of time, of rhythm, of sound (gong, tambourine, cymbals, a piano if possible; mats for silence, immobility and relaxation; a jumping jack that can be made to produce certain gestures or to adopt certain postures. And above all a mirror in which the child can watch his own movements, the better to construct his body schema... and also the better to understand the changes in viewpoint introduced by grammar (pronouns, the passive form).

(b) action is not used to inculcate knowledge but should be treated like a game in which the mind is attentive to the body, feels and perceives it clearly, 'directs' it - in pleasurable surroundings and with moments of relaxation in which one can forget the body.

The exercises are programmed and the sessions organized for a precise end - for instance right/left recognition (right hand, left hand, leg, eye, ear; placing objects to one's right, to the right of a comrade, of another object, taking something from the right ... from the left, with closed eyes ...; recognizing before and after in an action or in a piece of music; stopping the action, stopping the music.

The risks of formalism and boredom are obvious. The reward is that everything become integrated into coherent actions ranging from mime (mimed stories) to judo through dances and all the adaptive games the teacher is able to introduce while bearing the child's age and handicap in mind. Not even children with cerebral palsy will find all of it beyond them. The exercises are indispensable for deaf children, for retarded children and above all for blind children.

DAILY LANGUAGE PRACTICE

I. THE RIGHT TO SPEECH

Perhaps we might be allowed to recall a commonplace worthy of being a proverb: it is by speaking that we learn to speak, and its corollary: the speech of a child learning to speak must not only be tolerated but encouraged - on a condition that a few rules are respected (which are part of what has to be learnt) - at all times and everywhere, even during activities with quite a different purpose (gymnastics, drawing...).

II. A LANGUAGE SANCTUARY

Very useful, especially with very young children and with those who have the greatest difficulties, is the provision of a language 'sanctuary' which, for lack of anything better, can be set up in a corner of the classroom, with wall-hangings, carpet squares, mats, cushions, posters... to turn it into an agreeable place. All Oriental story tellers know that one does not stand about just anywhere or anyhow if one wants to be listened to.

Some aids: a tape recorder, duly presented as a memory machine, picture books, a slide projector, a puppet theatre; living things as well: a bean that helps to structure time by germinating and growing in a pot; a gold fish and a hamster that have to be fed at regular itnervals. Large sheets of paper and brushes, as different methods of, and occasions for, 'speaking'. A little music for background sound or to highlight a story.

Who comes to this area? The whole class or only a group? It is quite important to keep the group heterogeneous. The exchange of viewpoints is more active in such groups provided the teacher keeps an eye on everyone and provided the less able (those having language problems and all the handicapped children in the group) not only have a turn at speaking but do so from some central place, everyone else listening to them and following their progress from close by.

What should be done in that area? The answer is: two inseparable activities which we shall nevertheless separate the better to evaluate each of them, namely speaking and getting people to speak.

SPEAKING TO CHILDREN

All children, no matter what their handicap or age, need models of voice production. At times, of course, the models are isolated syllables used to aid speech, but for the rest they are very simple, organized wholes that respect the language rules and tell someone something about something.

Speaking to children, in their language 'sanctuary', no matter what the subject (stories, fairy tales, pictures, current events...) is not a diversion or an exceptional reward but the basis of everything else, even for those who do not speak a single word or only say a few. This fact should be explained to the parents.

However, for optimum effect the following conditions must also be met:

1. The children must be involved, must join in with pleasure

   (a) This naturally presupposes a careful choice of subject. The success of a 'hit' is not guaranteed, but we have seen 'duds' turn into 'hits' after several repetitions. The teacher, too, must enjoy the spectacle - with due detachment, as he would in the theatre. As in the theatre, the public has the last word. In case of fiasco, it does no good to blame the audience. What is needed is better acting or a change in the playbill.

   (b) That presupposes - still as in the theatre - stress, intonation, melody, gesticulation, change of scenery, silence, suspense... even, and a fortiori, when one speaks to the deaf or the retarded.

   (c) As in sacred plays, there must be stylization, which means less but better talk. The methods of 'handing down' formats to a community or to individuals are the same.

(d) The activity must be adapted to the audience

- It goes without saying that the subject must be adapted to the age and interests of the children: fairy tales for the youngest must be replaced with extracts from legends, adventure stories, but also with accounts culled from the daily life of the district or the village and newspaper articles, for the older ones.

- In fact, the atmosphere we are trying to create is not a dreamy one. On the contrary, we must be careful to combine connotation with denotation, voyages in space and time with accurate accounts of everyday life, descriptions so well drawn that familiar objects, animals and life at home can be identified.

- As far as stories are concerned, an important point - which follows from what we have been saying - is that, no matter what the source of his story, the teacher must rewrite it in words already known to his pupils together with any new elements he may wish to introduce as part of his programme. With heterogeneous groups he will add items, episodes, supplements for the more advanced, and present them differently from the 'vulgate' version, but in a way that the less advanced can listen to or that, if need be, can be summed up for them in a suitable way.

- Naturally, all these activities pursued during regular sessions - all these 'routines' in the non-pejorative sense of the word - impose obligations on the child, however agreeable these may be. In particular, they demand his active participation, not only to reinforce his motivations but also to enable the teacher to gauge his level of comprehension, without the whole thing being turned into a kind of school test.

(e) Gauging comprehension

There are a hundred and one ways of gauging comprehension (according to the child's age): asking him to point out the latest protagonist on a picture; giving the repetitive reply in the story teller's place; reacting to nonsense introduced for that very purpose: shouting the truth when one of the actors lies; continuing the story with mime; illustrating the story by choosing pictures and putting them in the correct order.

If the level of comprehension is gauged to be poor, the teacher can retell the story in a different tone of voice (children like repetition; indeed live by repetition), choose simpler words, be more insistent, add illustrative material, ask how the children would put these things at home or in their district (where they may be using 'what' for 'who' or 'which').

(f) How to speak

The teacher has to be a genius or have precise knowledge of the child's stock of words not to utter any the child cannot understand easily. Nor should that be his aim: it is essential that he upset the balance of what has been understood, but without rupturing the equilibrium too severely and making sure that the misunderstanding does not last too long and that it is not too painful.

This can be illustrated by an anecdote. It concerns a comprehension test during which retarded children were told about mice that had eaten a slice of Gruyere cheese. The children were asked to look for the cheese on a picture, and when they failed to find it, the teacher drew their attention to the special characteristics of Gruyere cheese, namely its holes (French: trous). Philip kept searching diligently but in vain while encourgements rained down, but eventually he burst out: 'There aren't any wheels (roues'). Phonetically, he was quite right, of course, but an impasse had been reached. When the teacher rejected his answer (without saying why), Philip concluded that no dialogue was possible with someone so obviously prejudiced against him. Perhaps he was right again. He naturally abandoned his idle search for holes or wheels, it matters little which, and surrendered to reveries in which his body - freedom - reigned supreme. In a low voice, he imitated the throb of his father's car and kept turning an imaginary steering wheel.

Let him who is without sin, cast the first stone... The moral of this story is that the teacher must be vigilant at all times, even when gauging comprehension.

(g) How to listen

Every teacher known how to obtain silence. The commonest method, in difficult circumstances, is to persuade pupils that the whole system can only work if they keep their mouths shut. However, allowances have to be made when an autistic child might have something to say - provided the rest of the class has been forewarned.

The most important strategem, which is quite obvious but has to be recalled, is that, during this activity, the teacher uses such methods of fostering comprehension as the child is used to (lip reading, Cued Speech...); that the child wears his hearing aid if he is deaf; that the story is told by one of the methods we have mentioned in our discussion of deaf-and-blind children; and that it can be translated into a graphic (or rather into a pictographic) code for some mentally retarded children. Finally, it must be said that some children do better if the teacher's voice is louder than normal or if it is specially amplified.

Legend: This is the story of a doll that loved sweets. The teacher tells what she knows about her ...

Acknowledgement: Photo C.N.D.P. Paris, Pierre Allard

120

GETTING CHILDREN TO SPEAK

It might seem odd of us to combine in one and the same chapter advice on eliciting speech from quite different groups of children. The reason is that our habits of classification and ready-made prescriptions must not make us forget that we are dealing with children and that, regardless of their 'technical' handicap or their particular difficulty in understanding and uttering words, all of them come up against the same general problems: having something to say, having a reason for saying it, having words to say it, occasions on which to say them and above all interlocutors to whom to address them.

I. TYPES OF INTERACTION

1. The range of proven practices includes:

   (a) planned individual face-to-face sessions - such as the speech-aid sessions we have mentioned - closely linked to the 'technical' advances we have examined;

   (b) other types of individual session may also prove useful. Linked to particular occasions and needs, of short duration, they are intended to improve a child's performance in a particular respect and can be held at any time;

   (c) in all cases, however, the prerequisite of success is the presence of a group (class or smaller group) so that an authentic form of communication can develop;

   (d) in other words, the sessions are not devoted to exercises divorced from the context of the action and centred on language, but are attempts to foster adjustment, starting from spontaneous productions which, as the teacher points out without reproach, could be improved.

An interesting practice is the so-called 'free text'. It can take place at the beginning of the session, and involves getting those pupils who feel like it - and later some of the others - to recount minor events in their recent experience, inside the classroom or out. The account can, if necessary, be completed, its language polished and/or rephrased in such a way that it can be told to an outsider. Interschool correspondence will enhance this collective effort; it can take the form of tape cassettes or letters (ranging in length from a 'sentence' of 2 or 3 words under a drawing, on the back of a photograph, or on tape, to which the addressees reply more or less briefly, but with a personal touch). They can be from nearby (pupils from another class, a group of parents, elderly persons...). Even non-verbal, graphic communications can be used, if correspondents can be found.

It is within this framework and without loss of rigour or direction - provided the teacher knows how to harness the 'needs of the moment' and how to steer the choice of the individual or collective speech productions discreetly - that these exercises will help the child to seize the available linguistic possibilities without devitalizing his language.

II. SOME PRINCIPLES AND PRECAUTIONS

1. Every child must speak by himself, invent his own answers (which precludes the repetition of sentences especially in chorus, except in the particular case of clarifying the child's own utterances).

2. One thing at a time. A child expected to talk about a picture should not be faced with the additional problem of having to work out what the picture represents. If necessary, all the clarifications should be given beforehand.

3. We always speak to someone (to another person or to ourselves), except in school exercises designed to help children to complete, enrich, elaborate and rephrase a sentence, and to endow it with the qualities (wrongly) attributed to 'good' speech. We have already illustrated this point with our telegram: Grandmother arrives tomorrow. That is a perfect sentence, and embellishing it would hide this fundamental truth, at least to the

person to whom the message is addressed (that is precisely why an addressee is needed). The sentence is for him. It is he and no one else who can tell if it is adequate (i.e. if he is sure to which of his grandmothers and to which point of arrival the telegram refers). The sender, in any case, believed the message was explicit enough. Only the addressee and no one else can confirm or refute that assumption.

4. We always speak for some reason

Precisely because there is an interlocutor, there is also an objective. If I tell my brother, Grandmother arrives tomorrow, I do so either to get him involved (he must do this or that, if he does not, it will be his own fault), to threaten him or to make him a promise. It is immaterial whether the sentence is elegant or not - he knows what I mean.

That is why linguists distinguish between utterance (what one says) and intention (why one says it).

One of the many implicit rules of communication-intention is not to ask obvious questions or to make obvious replies. To do that means using 'anti-language', for instance when we try to make a deaf child show off his talents by asking a distinguished visitor 'Do you wear shoes?', or a retarded child to perfect his methods of questioning by repeatedly asking his neighbour at table 'What is your name?'

5. We always speak of something

In order to speak of something we need words. True, schools teach 'vocabulary' but they go out of their way to focus attention on the art of combining words, on 'grammar', not only because 'the code needs to be changed' but also because of their belief that grammar is a great form of intellectual gymnastics leading to progress in logical thought.

(a) With most handicapped children, the most urgent need at any given moment revolves round the vocabulary.

(b) Stress should be laid on their concrete vocabulary. It must however be emphasized that if children are to understand the models they encounter every day, they have an equal need for a basic 'abstract' vocabulary (inasmuch as that distinction has any objective content).

(c) Above all, children must be alerted to changes in meaning, to the possible transformation of a concrete into an abstract word.

The more difficult the acquisition of the vocabulary has been, the more convinced is the handicapped child that a word always retains the meaning he knows. Now, having apparently acquired a sound grasp during lessons of the meaning of the verb 'to give' (give someone a sweet, a book, a reward ...) how can he have faith in his vocabulary when he hears his mother saying on one and the same day 'give me a dozen of those', 'give pause', 'give ground', 'give rise to'...). It is only by systematic word-play exercises that the child gains the suppleness of mind he needs.

(d) An additional reason for our insistence on word play is not simply the acquisition of a more flexible vocabulary; many of the changes involved are, in fact, changes from the rigorous field of what we have called denotation to the more relaxed field of connotation.

It is not by chance that, the moment their heart (we would say their body) is involved, people abandon the vocabulary of denotation, 'weights and measures', to resort to more familiar words, generally misappropriating their usage. Thus they will use all sorts of confections to refer to their loves, conjure up bulls and fishes to people the sky, and a host of other metaphors to calm their fears.

Like most of us, indeed more so than most of us, handicapped children need these 'regressions' to recover their strength. It is not in order to plunge them into the 'nacreous fog of superstitions and of poets' that we must initiate them into the big metaphor game, but to help them to understand and to make themselves understood, in short to help them to live.

6. We always speak in order to be understood

The most difficult but the most vital thing the teacher must do is to refrain resoutely from reading his own meaning into the child's words and to let the child himself endow them with meaning.

This applies not only to badly pronounced words, but also to words the child wants to utter but cannot. Another anecdote will ilustrate this point. 'Who's got an idea (French: idée)?' the teacher asked in an attempt to get a language lesson re-started. The reply - 'My Daddy!' - burst from the lips of Isabelle, a trisomic child. The teacher's explanations, repeated with great know-how, did nothing but compound the misunder-standing and produced a flood of tears that continued until the teacher suddenly asked: 'What kind of idée? The right trigger had been pulled: 'It's got wheels, a steering wheel and it's white'. In short, it was the family I.D. (pronounced idée - an earlier type of Citroën). At long last the family car and the family received the consideration they should have had from the outset. What if all Isabelle's problems could be explained, at least in part, by her dogged and so often frustrated wish to be understood a little more often? The important thing is never to conclude too hastily that 'this is quite meaningless' - 'this' always does try to convey something but cannot, and we are here to help it being said. To that end we must also pay careful attention to minor events in the life of the class, i.e. to the context. That is where the key to success will often be found.

More significant perhaps is the story told by an Italian teacher, Agata Cancelliere about the integration of little Luigi into a normal class:

'The child started by remaining seated (for 10 minutes) and listening to us. He then began to make drawings based on a class discussion, a reading by his teacher, a find or an idea another child had brought to the class, each pupil having been asked for a drawing of what had struck him (or of part of it). Next, all the drawings were put up on the wall and all the children were asked to describe their own drawings. Luigi's drawing was dis-played as well. At first no one could make anything of his black marks - he always drew in black pencil. From time to time, I would say what Luigi's drawings made me think of, but no one was interested.

It was only when the children recognized their own marks in Luigi's - a tree, a cradle, Mummy, a flower - only then would Luigi be satisfied with the interpretation. In some way, his incomprehensible marks reflected the attention Luigi had paid to the conversation; the children were surprised that I attached so much importance to them, that I put them to one side and in date order, thinking that one day we might perhaps come to understand them.

Luigi's drawings had a remarkable graphic organization: large diamonds touching circles at the end of long sticks. Luigi explained it all in his incomprehensible, husky voice. I tried to get him to join in our class discussions, to make him repeat words, sounds.

Luigi would repeat sounds and strange words all to himself and, at the beginning, I would write them on the blackboard, then the children would do the same, and in the end the whole class would read them out aloud.

At first, the children seemed most reluctant to read out strange words without any apparent sense, and they would laugh. They found the reading difficult. Gradually, however, Luigi's sounds seemed to become more articulate: ATA FISO UTO GI RENE.

Luigi was very surprised to hear his own words being read out aloud. I knew that Luigi's speech was very retarded, but I thought that he had invented these words on the spur of the moment to make us laugh, to take us by surprise or to annoy us and to stop the reading. What was certain was that he had wanted to tell us something and this discovery gave the children great pleasure.

In the mornings, as soon as he arrived, Luigi would fire incomprehensible, strange, words at us, but we would make a point of taking them seriously. The children would write these mysterious words on the blackboard as they heard them. I had the impression that Luigi himself was beginning to hear them as well. We would make him listen to them as we repeated them very slowly, concentrating on some of the words he had uttered.

In that way a conversation in his own words was begun between him and us to which we paid attention and attached due importance. Admittedly that was by no means easy to do. Listening was not always complete or lasting. What was important was that we, all of us together, should have come to realize that <u>if we wanted to join Luigi where he was, then we had to listen to his words</u> and that <u>his words were important, even if they were mysterious</u>.

Moreover, it was in this fog of words that, from time to time, the other children came to recognize - intuitively - the sound of words that they themselves were in the habit of using, the words spoken by us all. 'Listen, Miss, he has just said 'sun'; he has just called 'ATA ... ATA'.

The large exercise book containing Luigi's contributions became more and more important to me. The children said: 'He made this drawing here when we were speaking of conkers'. A dossier of Luigi's progress was slowly being built up.

...

Luigi began to write when a whole set of relations and identifications had left their traces. He often copied the words I had written up, albeit their sense escaped him. That task, too, proved useful because copying demanded a great deal of attention and application from Luigi. He performed it, but did not conquer writing and speech until later - until the complex construction of a personal identity had been begun'.

7. Speaking 'properly'

The above account of the great efforts it took to get Luigi to speak, puts 'speaking properly' in its place which is, chronologically, after the acquisition of language in the broadest sense. The main virtue of the latter is that it 'functions' like a language. However, this assertion needs several qualifications, namely:

(a) The teacher himself must always speak correctly. The child expects him to produce a model (the teacher will often refuse to accept specially 'adapted' phrases formulated in 'baby talk' or in 'loose' language). That model must be as simple as the occasion demands (vocabulary, syntax...) but made up of complete, well-articulated sentences spoken in a loud enough voice.

(b) The pupil, as we have said, must be guided towards the goal of clear speech - gradually, systematically and without excessive haste, i.e. at a rate in keeping with his development.

That means that the teacher must also 'point out mistakes' and 'correct' them. How should he do that?

(c) Let us look at 'mistakes' first. In fact, the idea of 'mistakes' dominates most language-teaching - not surprisingly so since that teaching is concerned with helping the child to learn a code. When that code is not respected we get mistakes, i.e. mistakes in the normative sense, mistakes like those made by a driver who breaks the highway code.

Quite obviously a pupil who, because of a handicap, is still at the confused mumbling stage, will be almost permanently 'mistaken'. Were we to point that out to him all the time, we should not be making things easier for him.

It is therefore best to approach the problem from a different angle and to draw the child's attention to his 'slips' of the 'tongue' or 'incidents' and to possible 'improvements' rather than to his 'mistakes'. Such incidents include:

- ways of saying things that undermine the language function (a verb without a subject, a pronoun without an antecedent ...);

- ways of saying things that allow the function to come into play but break the 'correct language' code (be it because of family or local usage or because of ignorance): e.g. 'He came to mine' instead of 'he came to my house', 'that' instead of 'it'....

Let us simply put it that children have many good excuses for stumbling, and let us also add another commonplace that needs to be recalled: the main problem is to help the child to avoid repetitions of these slips.

(d) Corrections

- The moment we enter the realm of language, everything that conveys meaning is good, even if the teacher has to go a good part of the way to help the child discover the meaning. At the beginning, the teacher must simply aim at increasing the number of meaningful expressions.

- Even if he has no phonological problem, the child should, from the outset, be taught to pay attention to his breathing while he speaks, to the way he articulates his words and to the way in which he is understood by others. The recitation of very brief texts will prove helpful, provided the child realizes that this is an important part of the exercise and provided the audience is demanding enough.

- In most cases, just as soon as sentences are first formed, and when 'slips' appear as a result, the teacher should ignore all mistakes characteristic of the language level concerned. In other words, he must not dwell on what was wrong with the child's formulation but reformulate any faulty expressions explicitly for the benefit of the audience. At a certain point, 'Me seen gee-gee' should be respected (the more so as it is perfectly explicit) but reformulated as follows: 'What has Jeannette just been saying? She wanted to say 'I've seen a horse'. If the climate is propitious, he might ask Jeannette to repeat her statement in that form.

- At this level, language is acquired by inculcation, provided that the child's 'heart' is in it.

- Next, the teacher sets out what logical objections there are to errors that impair the functioning of language. He can do his best with the help of addressees who have failed to get the message addressed to them.

- Finally, there are coding errors, i.e. failures to handle the code (rules or usage). These must be eradicated by the classic methods, but also and above all by inculcation. It should not be forgotten that all children who reach the reading stage (and deaf children in particular) have acquired a source on which they should draw liberally.

Legend: This is the story of a doll that loved sweets. The teacher starts the story... the children continue it and butter some bread ... 'sweets are sticky...'

Acknowledgement: Photo C.N.D.P. Paris. Pierre Allard

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CONCLUSION

The rapid emergence of problems connected with the language acquisition of handicapped children and of appropriate solutions are a token of the long road traversed in recent years and warrant a very optimistic view of the prospects.

The most striking advances are in the field of information technology. They grow more diverse, more efficient, easier to implement and cheaper by the day and, as far as the relationship between handicapped persons and their physical and social environment is concerned, the new technologies are about to break all barriers, including the barrier of speech that cannot be emitted or received. However each of these advances takes us back to the person who does the communicating, who sets up common links.

Less well known to the public but just as important have been advances in the human sciences each of which, in their own way, are concerned with what happens when language is born and devel- oped, and later on when it functions. These advances have led to a fundamental change in attitude to the various problems exam- ined in this study.

First of all, they have provided a new view of communication and have helped us to go beyond what we have called the 'Platonic galaxy'.

As a result, there has been a transformation of the status of the infant, now considered, from before his birth, as a person whose emotions and intelligence are not only working but also laying the foundations on which the schoolboy and the man will later stand. Similarly, the status of even the most disadvantaged amongst the handicapped has changed - people no longer dare ask whether retarded children are educable, ineducable or semi-educable. We now see behind each one of them, a man, a full man, one who cannot be defined by some mean or ideal - for instance that of being well-spoken - but only by reference to desires and needs: a dynamic process that is never absent, but has to be assisted, stimulated, and sometimes discovered under the rudimentary signs of interest that the child takes in what is happening in the world outside.

This new approach has been responsible for a proliferation of techniques designed to aid language-acquisition. No matter what their underlying view of man, all of them aim to help people.

The new approach has also opened up new perspectives and ushered in important changes.

Greater attention to the importance of the context has highlighted new imperatives. One is to intervene very early on in order to prevent foreseeable disasters, mainly by getting the family or institutions to take appropriate measures at the earliest possible stage. Another is to provide parents with the ability and the means to play their irreplaceable parts to the full. A third is to limit the classroom segregation of handicapped children as far as possible, not least because one of its many disadvantages is the artificial concentration of children with the same problems and the least enriching exchanges.

All in all, we have an entirely different view of those handicaps that used to be blamed on vaguely defined physical disabilities and particularly on malfunctions of the central nervous system. Instead, we have been able to identify the role of marginalization and stigmatization in the creation or aggravation of language difficulties, retardation or developmental anomalies.

What seems to be gaining ground is a more 'ecological' approach, the view that language does not proceed by inculcation but by an interaction between a developing individual and his environment. The result is a radically new view of the role and methods of special education.

One of the most obvious consequences is that any remedial action must not be confined to individuals however competent they may be. To be useful and effective it should be based on the collaboration of all those who, at school and in the home, be they specialists or not, provide the interaction essential to the development of language and to its vitality.

What is needed further is the free circulation of all the newly gained knowledge, and that those who use it impart some of their skills to others, take note of their views and efforts, and share with them the elaboration of fresh strategies.

It is my hope that this modest study may help a little to lift the veil from some of the mysteries, to spread some knowledge and to help some people to enlarge and define the domain in which they can join in concerted action for the benefit of children.

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